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Misses

THE
NEW ENGLAND STATES

THEIR
CONSTITUTIONAL, JUDICIAL
EDUCATIONAL, COMMERCIAL, PROFESSIONAL AND
INDUSTRIAL HISTORY

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EDITOR


Vol. I.

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PREFACE.

 HIS work has been prepared by the publishers with a due sense of the responsibility resting upon them, and with an earnest effort to meet the just expectations of the public.

The best literary talent in New England was secured, whose names appear at the head of their respective articles. These gentlemen entered upon their work in a spirit of impartiality and thoroughness, and the result is an invaluable contribution to the historical literature of the New England States.

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CONTENTS.

	PAGE
A COMPENDIOUS HISTORY BY HENRY CABOT LODGE.	1
NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION . . . BY HENRY L. DAWES.	28
POLITICAL PARTIES BY WILLIAM T. DAVIS.	54
NEW ENGLAND IN THE COLONIZATION OF KANSAS BY EDWARD EVERETT HALE.	79
PROGRESS IN ELECTRICITY BY ELIHU THOMSON.	91
COTTON MANUFACTURE IN NEW ENGLAND BY EDWARD STANWOOD.	117
THE NEW ENGLAND WOOL MANUFACTURE BY S. N. D. NORTH.	188
THE LEATHER MANUFACTURE OF NEW ENGLAND BY ISAAC H. BAILEY.	277
THE SHOE MANUFACTURING INDUSTRY IN NEW ENGLAND. BY ISAAC H. BAILEY.	288
PAPER MAKING IN NEW ENGLAND BY WILLIAM WHITING.	303

	PAGE
THE INDIA RUBBER INDUSTRY IN NEW ENGLAND	334
BY HENRY C. PEARSON.	
THE MANUFACTURE OF IRON IN NEW ENGLAND	359
BY JAMES M. SWANK.	
NEW ENGLAND GRANITES	442
BY JAMES G. BATTERSON.	
CONSTITUTIONAL HISTORY OF CONNECTICUT	448
BY HENRY C. ROBINSON.	
CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS . . .	472
BY WILLIAM HAMERSLEY, LL.D.	



THE NEW ENGLAND STATES.

CHAPTER I.

A COMPENDIOUS HISTORY.

BY HENRY CABOT LODGE.

THE COLONIAL PERIOD.

IN the northeastern corner of the United States, stretching from the Canadian boundary to Long Island Sound, and from the Hudson River on the west to the Atlantic on the east, lies that group of Commonwealths called New England. It is a region of great natural beauty. The most easterly spurs of the Appalachian range show themselves in the hills of Berkshire, the Green Mountains of Vermont, and the White Mountains of New Hampshire. The rocky coast which stretches from Boston to the extremity of Maine is as beautiful as it is bold. Broken by hills and mountains, with pine forests spread over the Northern region, studded with lakes and crossed by noble rivers, nature has given to New England all that the lover of beauty could ask. She has been less generous in her more material gifts. The soil, except for certain fertile acres along the rivers, particularly in the noble valley of the Connecticut, is thin, rocky and unfruitful. The climate is harsh in winter, very cold in the northern portions, and chilly and variable on the coast. There is no mineral wealth, and quarries of granite, marble or sandstone are the only forms of profit to be found in the great rock formations. There is abundant power in her rivers, which has been turned to vast account, and the deep harbors of New England's coast have given refuge and opportunity to fishermen and merchants who have drawn a living, and sometimes wealth, from the great ocean beyond.

To the Norsemen of the tenth and eleventh centuries who first looked upon the country, New England seemed so fair after Iceland and Greenland that they called it Vinland, the land of the vine. But the name faded like the memory of the Vikings who gave it, until all that remains of the Norse discovery and adventure is a vague tale of the Sagas.

The next comers were men of kindred stock, but of a very different mould. Five hundred years went by after the Norse voyages before the Cabots sailed along the coast. It was a very fleeting visit, but it sufficed to give a title to the new world to the crown of England, and thus became the first step towards making North America English, and not Spanish or French.

Somewhat more than a hundred years later, in 1614, John Smith, famous in Virginian history, came voyaging along the coast between the Penobscot and Cape Cod, looking into the bays and skirting the headlands which all went down in a

map that even to-day gives a very good idea of the New England shore. Other voyagers and adventurers came and went, but the footsteps of the men destined to conquer the land from the powers of the wilderness were beginning now to draw near. They came hither driven forth by the forces then at work among the English people. The start was in the little village of Scrooby, in the east of England. Congregations whose consciences separated them from the established church, persecuted and oppressed, fled from England to Holland early in the 17th century. There they found rest and tolerance, but they could not bring themselves to the point of merging with the Dutch people, and thus losing the great speech and the great traditions which were part of their inheritance. They determined, therefore, to cross the ocean, bearing with them their language, their hopes and their creed, for which they had suffered so much. After much trouble, and through many obstacles, they got a patent. They started in two ships, and put back twice. Finally the "Mayflower" sailed alone with one hundred and two colonists. On November 21st, 1620, they were at Cape Cod. There they drew up and signed the famous instrument known as the compact of the "Mayflower," which recognized the great principle of government by the consent of the governed, and which was destined to be the forerunner and begetter of many free constitutions.

On December 21st, 1620, the little band landed on a rock on the Western side of the bay, held in the circling arm of Cape Cod, and called the place Plymouth. It was the founding of a nation on that bleak December day, and posterity has never failed thus far to recognize and commemorate it. They seem to have known it, too, those Pilgrims of Plymouth. They were very humble folk for the most part, poor and untitled, artisans, fishermen and farmers from the villages of East Anglia. But they came with an intent widely different from most immigrants and adventurers, and this ruling purpose can be seen in all they did. They formed a frame of government based on the broadest principles of political liberty. They established a church of their own which represented separation from all they had hitherto known. They organized an administration with proper officers and of first-rate efficiency. They passed laws, and enforced them; heard causes, and decided them. They set up an army, a very little army, indeed, hardly enough for a corporal's guard. But it was an effective and fighting army, and it had a very efficient commander in Miles Standish. He led no hosts and gained no battles, but he did his work admirably. He knew how to deal with the savages, or with white marauders, and, if his hand was heavy and relentless, his spring was quick, his execution vigorous, and his fighting was of more effect and of more worth to the world than that of many a great general. And behind all this were the half-dozen of sagacious leaders, men of education and position like Bradford and Winslow, who, with strength and wisdom, guided the affairs of the little state, for such it really was. They were the men that wrote down all that was said and all that was done. Bradford's diary shows us that the writer felt that he was engaged in a great work, and that men in after times would weigh and balance every detail of what he did. Bradford and his friends had "Empire in their brains," even if they were not clearly conscious of it. They did not come merely to make money, or get a home in the new land. Even the high purpose of securing a place where they could worship God unharmed and in their own fashion, was not the only object. They came to establish a state which should cover all these things, but which should also be a commonwealth, where those who made it ruled it, and not kings and priests or nobles whom accident placed over them.

With a purpose less great, with a religious fervor less deep, the attempt at Plymouth would have come to naught. The sufferings were frightful, the toil unending,

the immediate result a bare existence. In the first awful winter half their little company perished of cold, disease or famine. But they clung to the barren shores of the new world with grim English courage. Hope revived with the spring; then relief came slowly, very slowly, and they began to emerge from the darkness. They planted and fished; they honestly paid their debts; they kept back the savages, and gradually began to go further afield in pursuit of trade and fisheries. Slowly, very slowly, too, they grew in numbers and strength. In one word, they stayed where they were, and the foundation of New England, and of much more than New England, was firmly laid.

Eight years after the landing at Plymouth there came another immigration to New England. It was made up of men of the same race as those of Plymouth, and was started by a like impulse; but there the resemblance ceased. These new-comers were driven forth by the great movement then at work in England. It was the period when personal monarchy tried to establish itself in England as on the Continent, and when the Church, under the same impulse, was beginning to swing back towards the forms and ceremonies of Rome. Against these two forces was arrayed that which sought for greater popular freedom, more power in Parliament, and more simplicity and stricter Protestantism in the Church. On the one side were Charles and Laud. On the other was the great political body known as the "Country Party," in politics, and as the Puritans, in religion, made up of country gentlemen, a few nobles, the yeomanry, the farmers, the merchants and traders of the towns. After making great advances under James I., the country party was checked under his son, and when Charles I. dissolved Parliament, and resolved to rule without one, it looked as if the check was to be both lasting and decisive. Sometime before, in 1623, Puritans in England began to turn their eyes towards the new world. The Dorchester Company, for trading and fishing, was formed under the lead of the Rev. John White, and sent out men to establish a station at Cape Ann. The enterprise failed, and the company was dissolved, but Roger Conant and a few companions held on and moved their settlement from Cape Ann to Naunkeag, now Salem. In 1628 a second Dorchester Company, with larger powers and stronger backing, was organized, obtained a grant of lands, and the following summer sent out John Endicott, one of the patentees, to act as Governor and establish himself at Naunkeag with additional settlers. This paved the way for a much larger scheme, for the movement grew apace as the despotism of Charles increased. In 1629 a royal charter was obtained, which incorporated the Governor and Company of Massachusetts Bay. It was a remarkable instrument, drawn by men who had far-reaching schemes in their heads, and granted by other men who did not detect or even suspect those schemes. Under the guise of an ordinary trading charter an instrument was obtained, which, if the word "company" were omitted, carried in its loosely-drawn clauses a constitution for an independent state, with all the carefully-arranged machinery for representative government. Such it proved to be, and such was the work it did in the shrewd and able hands to which it was committed.

Matters were pushed rapidly forward. Six vessels were sent out, and Endicott was made the local Governor, the Governor of the Company being Matthew Cradock in London. The next spring John Winthrop was chosen Governor of the Company, and, with a fleet of eleven vessels, sailed for New England, stopping at Salem, and then finally disembarking and settling at Charlestown. Before the winter set in a thousand colonists had arrived. No such movement of settlement had been seen before, and it may be doubted if any such has ever occurred since. It was in reality the immigration of a people. They were not adventurers, come to seek an Eldorado;

they did not come for trade, as the Dutch came to New York. They came to found a state, and establish a church. They were not separatists, like the men of Plymouth; but members of the Church of England, who had sought to reform the abuses of that church, and, failing at home, crossed the sea to preserve what they believed to be the true faith. They were the foes of personal monarchy, and the believers in a free and powerful Parliament, which they had lost on one side of the Atlantic and meant to restore on the other. They were Puritans, men of the country party. Their leaders were of the class that produced Pym, and Hampden and Cromwell, country gentlemen, gently nurtured and college-bred, like Winthrop, or like Sir Henry Vane, who joined them later. Their clergy were of the established church, deprived members often, graduates of Oxford and Cambridge, scholars and preachers, stern and strong after the manner of the Puritans. The body of the immigrants who followed these leaders were yeomen, and farmers and workingmen from the towns, own brothers to those who filled the ranks of Cromwell's Ironsides, and dashed to pieces the Cavaliers of Rupert and the hardy Scotchmen of Leslie. They came strong not only in numbers, but backed in England by abundant wealth, and by men of solid worth and political power. The money was not invested for a return in kind, but to plant a state and a church. They had no debts to pay like the poor brethren at Plymouth, and the idea of earning money for the Company as such is never heard of. They suffered at first somewhat as all immigrants to a wilderness must suffer, but never like the Plymouth people, and there never was a suggestion that the enterprise could fail or be given up. They soon moved their capital from Charlestown to Boston, and a year had hardly elapsed when they had a strong government organized. The courts of the Company were held regularly from the outset. At first all power was exercised by the Governor and Assistants. Then general courts, where all freemen of the Company took part, were ordered to meet every year. No man could be a freeman of the Company, that is a voter, unless he was also a member in good standing of one of the churches; and thus was carried out the Puritan idea of a state and church united in one organization. The freemen soon took from the Assistants the power of choosing the Governor, and Winthrop declared the government to be in the nature of a Parliament. In a short time it became inconvenient for all the freemen to meet, and the various towns and plantations chose men to represent them in the meetings of the "great and general court." The trading company was gone; the independent state, where state and church were one, was founded and set up. All the powers of government were promptly exercised, taxes were laid, forts built and churches established.

They had need to act promptly. Laud had come to the primacy, and the Puritan immigration grew rapidly, led by such men as Hooker and Cotton. So rapidly did it increase that it aroused the attention of the government. Emigrant ships were detained, and Cradock was ordered to appear and produce the charter. Then it was discovered that the charter was in America, and the Crown now saw a real danger. Yet, even while the government at home was stirring, the freemen, met by their representatives, exercised their power of electing a Governor, voted money and administered oaths of allegiance, not to the king, but to the government of the colony. The trading company had gone now even in name, and a representative democracy was struggling into life on the shores of Massachusetts Bay.

It was a vigorous democracy, and full of vitality. In the ten years which intervened between the sailing of Winthrop and the meeting of the Long Parliament, the tide of immigration had set strongly to New England, slackening only as the Puritans began to gain strength, and Charles to lose ground at home. During that

period more than twenty thousand English Puritans came to Massachusetts Bay. It was a formidable movement for those days, and it is not surprising that the king's government were angered and attempted to interfere. But the colonists, barely settled as they were, faced the danger cheerfully. They refused to send back the charter, built new forts, erected beacons, fortified their little towns, and armed and disciplined soldiers. The Royal Commission on the other side prohibited emigration, brought warrants against the company against which the Court gave judgment. The legal end was near, but the Massachusetts people did not flinch. They were ready to fight and take their chances in battle against the crown, helped by distance and sustained by their own strong arms and stout hearts. But extremities did not come. Time helped the Massachusetts people. Charles became so absorbed by the Puritans in England that he could give no attention to their brethren across the water. So this danger from without passed by.

Other perils, however, were still to be faced and overcome in New England. There were outbreaks of resistance to the government in the colony itself. The Puritans did not come to New England to get freedom for every one to worship God in his own way, but for freedom for themselves, that they might worship God in their way. They set up, in furtherance of this, a system of government in which church and state were one. The member of the church was the freeman of the state, and the men who ruled the church shared in ruling the state. It was a strong government, but with the tendency to harshness and narrowness shown by all governments shared or controlled by priests. It was certain to provoke resistance among English Puritans, who, reformers themselves, were sure to have in their number some who were more reforming than the reformers, and quite as ready to come out against Puritan rule as they had been to come out against the rule of Charles and Laud. Endicott, for instance, cut the cross from the flag as a symbol of popery, and was disfranchised and relegated to private life for this extreme step at a time when the authorities were seeking to delay, if not ward off, an open breach with the authorities in England. Israel Stoughton also was disqualified for office for denying the power of Magistrates. These men submitted to punishment, and gave way. Roger Williams was of different stuff. He first attacked the right of Massachusetts to her land. He was called to account, made submission, and had his treatise burned. Then he preached at Salem, where he denounced women for going unveiled, and had a hand in Endicott's exploit with the flag. Then he preached against the King's patent, and denied the right of the magistrates to administer an oath to the unregenerate. The general court determined to send him to England, and Williams, alarmed, fled into the wilderness. He has come down to us as the apostle of liberty of conscience, yet, curiously enough, his offence consisted of attacks of a purely political character. His principles were no doubt religious, but his assaults were delivered against the right of the company to its land, against the allegiance of the freemen, against their relations with the king, and against the power of magistrates. Whatever his religious views, he was a political danger, and so he fled away into the forest to the southward. To his exile was due the foundation of Rhode Island, where many kindred spirits gathered about Williams, where a government of a loose and somewhat disorderly character sprang up, and where Williams by no means exercised the tolerance in which he thought the rulers of Massachusetts deficient.

The next outbreak was of a widely different character. It is difficult to realize now the utter absorption of those early Puritans, not only in religion, but in doctrinal points. But so it was. Religion and theology were all in all to them, and

in proportion to their interest were the divisions aroused by these burning topics. Mrs. Ann Hutchinson, an active, energetic woman, held lectures in Boston. She denounced the ministers as being under the covenant of works, and not of grace, and criticised their sermons. She gathered a strong party about her, men like Dummer and Coddington, and even to a certain extent gained the sympathy of John Cotton. An attack on the ministers and their doctrines, however, was an attack on the state which they administered. The quarrel broadened into politics, and grew apace. Sir Henry Vane, a very young man then, had come to the colony, and, thanks to his ability and his position, had been chosen Governor. He represented the younger and more liberal element, and he sustained Mrs. Hutchinson and her brother-in-law, Mr. Wheelright, who was under accusation of sedition for a certain sermon. The court adjudged Wheelright guilty, although Vane resisted, and the issue was thus fairly made. Boston inclined to Vane and Mrs. Hutchinson, but the other towns stood by the old leaders. The ministers put forth every exertion, and at the next election the conservative party triumphed, and Winthrop was chosen Governor. Vane soon sailed for England, and Mrs. Hutchinson was tried and condemned by the influence of the clergy, and finally expelled the jurisdiction. She went to Rhode Island, and thence to New York. Some of her friends suffered minor punishments, and followed her. It was a clear case of harsh and, in some respects, brutal persecution for opinion's sake. It cannot be defended, but it was inevitable in a state so constituted, and this much can be said, that the state came out of the contest with a vigor and consolidated strength which stood it in good stead in the years to come.

Even in the midst of all these domestic strifes other perils pressed upon the commonwealth. An Indian war came on, and, after a period of skirmishes, the Puritan forces were concentrated and marched on the Pequod country. They stormed the fort where the tribe was gathered at night, sword in hand, and put all its defenders to the sword. It was a characteristic piece of hard, thorough and unrelenting Puritan fighting, and was effective. As Cotton Mather said, after this fight, "the land rested forty years."

This campaign shows us also how New England was being built up, for it was fought by the united troops of three colonies. Plymouth, the first, and Massachusetts, the second, settlement both sent soldiers and joined them to those of a third colony which had sprung up in the years since 1630. This was the colony of Connecticut, formed by the company under the younger Winthrop, who had come out as Governor under the Say and Sele and Brooke grant, and who, after tearing down the Dutch arms, had established himself at Saybrook (1635), and by Hooker, who had led his people from Massachusetts through the forests, and planted a settlement (1636) at Hartford. Even while the Pequod war was raging another large body of immigrants, under the lead of John Davenport, the minister, and Theophilus Eaton, a merchant, had come to Massachusetts, and, after a brief stay, had sailed on to the southward, and, landing on the shores of Long Island Sound, had settled at New Haven, and there set up a government stricter and more purely theocratic even than that of Massachusetts. This made the fifth separate government on New England soil, and, in addition, adventurous Puritans were pushing to the North, making little plantations along the coast of what is now New Hampshire and Maine.

During all this period of danger from England, of religious dissensions at home, of Indian wars and extending settlement, the strong central colony of Massachusetts was developing in trade and agriculture, and in a firm and far-reaching domestic policy. To this early time of storm and stress belongs the foundation of the public school system, one of the greatest achievements of the time. In 1636 they went a

step farther, and, in their poverty and danger, voted an appropriation to found a college for the higher education, which took its name from John Harvard. They divided their general court into two houses; they perfected their government machinery, and they developed the town meeting, the best expression of self-governing democracy. It was a vast work for so short a time, and shows the powers of statesmen and of builders of states in these Puritan founders of New England.

The meeting of the Long Parliament was the signal for the arrest of the great migration to the shores of Massachusetts Bay. The Puritans now had other tasks to do in the larger field of England itself. But the work of settlement in New England was done. More than twenty thousand Englishmen had come there. Five separate states or colonies were established, and little plantations were creeping up and down the coast and back into the interior. This very division into different governments led to an important step, the foundation of the first union of states for the better carrying out of certain purposes common to all. The movement started in Connecticut and New Haven. Massachusetts was at first lukewarm, but at last, in May, 1643, commissioners from Plymouth, Connecticut and New Haven met those from Massachusetts in Boston, and the Confederacy of the United Colonies of New England was formed. The plantations in Rhode Island and those in Maine were not admitted. They were considered too unstable in government, and too unsettled in religion, to be joined with the four strong colonies. The Confederacy had great success, and proved a source of much strength. They remonstrated with the Swedes on the Delaware, and checked the Dutch in Connecticut. They treated with D'Aulnay in Acadia, brought Stuyvesant to terms, and reduced the Narragansetts to obedience. The difficulties in the Union arose from the disproportionate influence of Massachusetts, which was prone to refuse to accede to the wishes of the other confederate states unless they agreed with her own.

Profound as was the sympathy of the colonists with the great movement in England, they were no more disposed to come under subjection to the Parliament than to the king. Massachusetts continued to pursue the same policy as before. She brought the towns of New Hampshire and Maine within her jurisdiction; she denied the right of Parliament to meddle with her charter, and she took upon herself another attribute of sovereignty by coining money. She not only declined to join Cromwell in his conquest of Jamaica, but held back the confederacy from entering upon a war with the Dutch.

During the whole period of the Long-Parliament and the Protectorate, Massachusetts held the position of an independent state, and refused to proclaim Cromwell or his son Richard. The Puritans at home were well content with this, and had no desire to molest their brethren in America, so that New England, with Massachusetts in the lead, grew rapidly in wealth and strength. It was well that this was the case, for trying times were ahead. During this period of prosperity and independence Massachusetts had made enemies in more than one quarter. The Eastern proprietors, claiming under Mason and Gorges, felt themselves deeply wronged by the way in which the Puritans of Massachusetts had gathered the towns of New Hampshire and Maine into their jurisdiction. In addition to those who had suffered in property were some very different people who had suffered in life and limb at the hands of the Bay colonists. Chief among these were the Quakers, in those early days of the sect fanatical and violent, and as uncompromising as the intolerance against which they cried out. They came to New England to testify to the faith that was in them, and to the beliefs which they held. They were obnoxious to the Puritans from their religious tenets, and they stimulated hostility by their methods

of calling attention to their views, which included going naked in the streets and churches, breaking bottles before the congregations, and raising riots and disturbances. Instead of treating them merely as offenders against order when they broke the law, and then leaving them alone, the Puritan magistrates dealt with the Quakers and their opinions in the true theocratic fashion. They began with whipping and mutilation. The Quakers were then banished under pain of death. They returned, and the Puritans, under the lead of Endicott, relentlessly executed three men and one woman. But this unflinching tyranny wrought its own downfall. The policy which had driven forth Roger Williams and Ann Hutchinson could no longer be sustained. Public opinion would not support it, and the execution of the fanatics on Boston Common ended the business. The Quakers after that made their way into the colony, and remained there, as did also the Baptists, who had suffered persecution also, but in a less degree.

Such performances naturally left a bitter feeling against Massachusetts and her sister colonies, and the stored-up enmity of the Eastern proprietors, of the Quakers and Baptists, and of all who had suffered at the hands of the New England Puritans, waited only an opportunity for revenge. The chance came with the restoration of Charles II. in 1660, and the foes of New England were not slow to bring her affairs to the notice of the new rulers, who loved these distant Puritans no better than those nearer home. In the Bay colony no notice was taken of the Restoration for three months. But when news came of the attacks in London upon the colonies, the General Court of Massachusetts sent an address of compliment to the king, who replied to it in gracious terms. Then ensued a long diplomatic struggle. Massachusetts fought for time, and strove with great skill to put off the decisive issue. After fifteen months' delay, Charles was proclaimed in Boston; but, although compliance was promised in the demand for the regicides, they found safe hiding in Massachusetts and Connecticut, and were never arrested. Connecticut, however, made no such opposition as Massachusetts. She proclaimed Charles at once, and sent over John Winthrop, the younger, to plead her cause. His own ability, and the dislike of Massachusetts, led to the grant of a liberal royal charter, which Connecticut had thus far been without. Under this instrument New Haven was consolidated with Connecticut, and, after much heart-burning and opposition, the former submitted. This broke up the Confederacy of the United Colonies. The balance was destroyed, and the Union soon went to pieces.

Rhode Island, weak, distracted, and excluded from the confederacy, was only too eager to be on good terms with the home government. She hastened to proclaim Charles, and sent John Clark to England as commissioner. Clark was as successful as Winthrop. He, too, obtained a most liberal charter, by which a popular elective government was fairly established. The English policy was thus successful in dividing the smaller New England colonies from Massachusetts, and thereby weakening the strength of the whole, but it conferred a great benefit on both Rhode Island and Connecticut.

The result of it all was that Massachusetts was left alone in her attitude of resistance to Charles. It was a stubborn and an adroit resistance. The colony slowly yielded on one unessential point after another with great protestations as to loyalty and obedience, and silently refused to give way on a single essential principle. They refused to comply with the royal mandamus to send the Quakers to England for trial, but they modified the laws in regard to such offenders. They condemned the doctrine of the Fifth Monarchy men; they ordered the Governor to take bonds for ships under the hitherto disregarded Navigation Act, and finally, although with much

bitterness of spirit, allowed the administration of justice to be carried on in the King's name. On the other hand, while they admitted the duty of allegiance, they did not take the oath; they failed to repeal laws in derogation of the crown authority; they did not permit the use of the Prayer Book, and they declined to abolish the religious test for suffrage; all which things had been ordered to be done by the King. This struggle, conducted by means of tardy letters, slow-travelling commissioners, and lingering committees, ran on for four years, and then appeared four royal commissioners in ships of war, to settle the affairs of New England. They came to Boston and announced that they were prepared to hear all complaints, and look into the affairs of the colony. The general court, therefore, proceeded to make sundry concessions. They passed loyal resolutions, and ordered two hundred soldiers to be raised for the expedition against the Dutch; they abolished the religious test for the suffrage, and required in its stead something very like it, a certificate of good character from the voter's minister. Finally, they appointed a committee to consider the demands of the royal commissioners.

While the committee was considering, the commissioners sailed away to New York, of which they made an easy conquest. They then visited Connecticut, which complied with their demands despite the feeling of the New Haven towns, which were as rigid and strict as those of Massachusetts. They met with the same ready compliance in Rhode Island and Plymouth. Then having in this way detached the smaller colonies, they turned again, after an absence of two years (1666), to Massachusetts. Their demands were laid before the General Court and were met with silence sometimes, sometimes with argument, but never with submission. At last delay and negotiation were worn out and the commissioners set a day when they would hear appeals against the Governor and General Court. The issue was made up and on the morning of the day fixed, a messenger from the General Court appeared before the house of the commissioners and proclaimed that appeals to them would not be permitted. The commissioners had no force to cope with the powerful colony. They were beaten, and after filing a protest withdrew. Cartwright, the Commissioner, who had the papers, was captured at sea, and while he waited for copies the anger of the ministry cooled and the attention of England was drawn to other and more important matters concerning the Dutch war, and troubles in Parliament. Massachusetts had escaped from the first attack. She sent a conciliatory present of masts for the royal navy, offered aid for the war, quietly resumed her control of Maine and all things went on as before.

Eight years of rest and quiet followed, and New England needed them, for they were followed by a sore trial. The storm of Indian war, so long held back by the thorough work at the Pequod fort, now broke upon the colonists with dreadful force (1675). It was known as King Philip's war, and starting in Rhode Island spread West and North, soon involving the Narragansetts and then the Northern tribes. The outlying towns and settlements were burned and sacked with all the horrors of Indian warfare. The colonists in all the colonies rallied, the Narragansett fort was stormed, and that great tribe broken; but the war then shifted to the Westward and raged through the Connecticut valley. At last, after much stubborn fighting, the colonists slowly but surely got the upper hand. The Indians were broken; Philip was killed; the fighting grew more desultory and gradually faded out.

The conflict, however, had lasted two years, and the suffering of the colonies by their losses in men, money and settlements had been enormous. They were sadly weakened, and it was just at this period of distress that the attack upon Massachusetts was renewed in England. A capable intriguing agent, named Randolph, was

sent out, who not only worked zealously to keep up the attack, but who also succeeded in gradually forming a party in the colony itself favorable to the crown. Still the colonists fought bravely, yielding only inch by inch and resorting to their old tactics of delay and negotiation. As before, they displayed much skill, sent agents to England, bought up the Gorges' claims which secured them the province of Maine and made the best fight possible. They succeeded in postponing the dreaded conclusion for eight years, but, except for the acquisition of Maine, they gained nothing else. They were fatally weakened now by the growth of a crown party at home, owing to the timidity which came from the property and vested interests slowly gathered in the years of prosperity. The Maine claim was sustained, but New Hampshire was taken from them and erected into a separate government. Not long after the final blow fell a writ of *quo warranto* was brought, the charter was annulled and a royal Governor, Colonel Kirke, appointed. The death of Charles II. caused still further delay, but at last the new king, James II., sent out Sir Edmund Andros to be Governor General of all New England. The colonial charter and the independent government of Massachusetts were swept away, while the charters of the other colonies fell into abeyance, and all New England passed from freedom to the rule of the representative of the last and dullest, even if not in all respects the worst, of the Stuarts.

Andros was by no means the tyrant that New England historians have sometimes depicted. He was, too, a man of ability, but he represented a bad system and served a bad master. Rhode Island submitted to him without murmur. The separate crown government set up in New Hampshire at the time of the struggle between Massachusetts and the king, after a turbulent existence of ten years, disappeared when Dudley and the royal commission took charge of Massachusetts, and the old union then renewed went on under Andros. Connecticut, which had been greatly occupied with boundary disputes with the Dutch on one side and Rhode Island on the other, had held on to her charter while Charles II. was finishing the contest with Massachusetts. She loyally and promptly proclaimed James II., but even her adroitness and obedience failed before such a king as the last Stuart. Randolph had brought charges against her as well as Massachusetts, and a writ of *quo warranto* had been ordered. Connecticut now stood her ground and refused to come under Dudley and the commission, but all was in vain. Andros had had trouble with Connecticut when Governor of New York, and regarded her in no kindly spirit. As soon as he arrived he sent to Hartford and demanded the surrender of the charter. The government of the colony congratulated Andros on his arrival, but would do no more. At last (1687) Andros went to Hartford himself with a large escort. There he met the Governor and Council and at an evening conference, tradition says, the lights were suddenly put out and the charter, which had been lying on the table, disappeared in the darkness and confusion that ensued. According to tradition, also, the charter was hidden in the famous oak. Certain it is that the original charter, or a duplicate, was safely preserved. It is also certain that the next day Andros took possession, was acknowledged, and appointed councillors. The old free charter government was overthrown. Connecticut, after this blow, submitted and biding its time remained quiet under Andros.

It was in Massachusetts that the resistance continued and that Andros made his heavy hand felt. After the manner of the king he served he not only governed badly but stupidly. He did needless things and trampled on prejudices which might perfectly well have been let alone. He laid taxes at his own pleasure, and denied the writ of habeas corpus to John Wise, of Ipswich, who had preached against taxation

without representation, a theme destined to become more famous at a later day. These acts of political oppression he followed up by an attack on property, declaring all old titles to be worthless and demanding a fee for renewal. He excited religious feeling by prohibiting civil marriages; seized the old South Church for the Episcopal service, and compelled swearing by the Book in the courts of justice. In this way he roused all the political antagonism of the mass of the people and added to it the hostility of all who had property, which were both sharpened by the bitterness of the entire community to whom their religious beliefs, which he had wantonly outraged, were dearer than all else. Thus he alienated the timid who had accepted the crown government and joined them again to the body of the people who had done battle for the old charter and had never been reconciled to its loss. He prepared everything for revolt, and when he returned from his unsuccessful Indian wars in the East, all was ready for an outbreak. The impulse came from across the seas in the news of the landing of William of Orange (1689). Andros arrested the messenger and issued a proclamation against the Prince. It was quite useless. Without apparent leaders, and yet with perfect organization, the revolution came. Boston rose in arms; signal fires were lighted; the country people poured in, and after formal proclamation by a committee of gentlemen of the misdoings of the Stuart government, Andros and Dudley were seized and thrown into prison. With them went the Captain of the royal frigate, while the ship herself lay helpless under the guns of the fort. The old government under the old charter was provisionally established with Bradstreet as Governor, and William and Mary were joyfully proclaimed. Presently Andros and Dudley were sent to England as prisoners, while Increase Mather, with Cooke and Oakes, were appointed agents to represent the interests of the colony at the new court in London.

As soon as the news of the fall of Andros reached Connecticut, the old government started up at once as if nothing had happened, and all went on as before. The same thing happened in Rhode Island, where the charter government was quietly resumed. New Hampshire gladly returned to her old union under the provisional government of Massachusetts, which stood once more in all her former strength. Such complete good fortune did not, however, last. Connecticut and Rhode Island were left in undisturbed enjoyment of their old charters, which had never been vacated. But Massachusetts had resisted royal authority too vigorously to be wholly acceptable, even to the hero of the Protestant interest. New Hampshire was cut off and again erected into a royal province with a separate government. Plymouth was consolidated with Massachusetts, but not all the diplomatic arts of Increase Mather could secure a restoration of the old charter of the company. A new and liberal provincial charter was granted, but the appointment of the Governor was vested in the crown, and Massachusetts became a royal province. A good and liberal government for those days was granted, but the old order of things had passed away and the independent Puritan state of early days had ceased to exist. The Governor appointed the judiciary, the religious test was replaced by a property qualification, but the power of the purse remained with the representatives of the people, and on this was to be built up the next resistance of Massachusetts to the crown.

CHAPTER II.

A COMPENDIOUS HISTORY—Continued.

THE PROVINCIAL PERIOD.



INCREASE MATHER had more to do than any one else with getting the new charter, but although he did not get all he wanted he got a great deal, and he had the satisfaction of selecting the first royal governor. His choice fell upon Sir William Phips, a native of Maine, who had made his fortune by raising a Spanish galleon, and who had captured Port Royal. It was a sufficiently popular selection, although Phips was not a very able or very wise man, and thus equipped with charter and Governor, Mather returned (1691) to Massachusetts, and the new government began.

The four years of Phips's brief and somewhat turbulent administration were marked by one event which has had a wide and unhappy celebrity. This was the outbreak of popular superstition and panic known as the Salem witchcraft. Beginning with the visions and delusions of Cotton Mather, who would perhaps be now considered as a *voyant*, or spiritual medium, it broke forth in Salem with virulence, and resulted in the death of some twenty persons, male and female. Giles Corey was pressed to death for refusing to plead, the last hideous example in this country of the application of the "*peine forte et dure*" for contumacy. The other victims were hanged. It seems a pity to overthrow a statement so often reiterated, but, as a matter of fact, none were burned. As a popular panic, resulting in death and suffering, there is nothing very extraordinary about the Salem witchcraft. Fifty years later, in New York, there occurred the panic known as the negro plot, to burn the city. On utterly insufficient testimony, with scarcely any evidence at all, in fact, the people went mad with fright. Four whites were hanged, seventy negroes transported, eighteen hung and thirteen burned at the stake. In this case in New York there really was burning.

Only a few years before the outbreak in Salem there was a popular panic in England, known as the Popish plot, in which a peer of the realm, and others of less rank, were sent to the block. Parliament was maddened and the whole kingdom convulsed on evidence which, on its face, reeked with contradictions, which was given by men of the worst character, and who are now known to have been perjured. In the New York plot and in the Popish plot, the accusations were of a character wholly natural and within the range of ordinary human testimony, and yet the popular excitement was such that men were sent to cruel deaths on evidence which in ordinary times would not convict a criminal of the most petty offense. Yet they have never brought a tithe of the opprobrium which fell on the people of New England for the witchcraft trials, when the evidence was of the most direct character, and when the unfortunate victims sometimes confessed their supposed guilt. The witchcraft trials and executions were terrible enough but they are not unexampled; they were the results of an epidemic panic of which, unfortunately, there have been many instances. They have been misunderstood and misstated because the world has come to regard belief in witchcraft as a peculiarly foolish superstition, and have, therefore, classed all the

evidence as perjured and invented, like that of Titus Oates. Given the belief in witchcraft, and the evidence adduced at Salem was often overwhelming. Moreover, this belief was general in those times. James I. had a profound faith in it, and so had the body of the people over whom he and his successors ruled. The number of New England victims was trifling compared to those whom Matthew Hopkins, the "witch-finder," alone brought to cruel punishment in England during the first half of the seventeenth century. We are so far away from the beliefs and habits of thought which made the punishment of witches possible, that it is easy to visit on the people of Massachusetts a condemnation beyond their deserts, which were serious enough. The community was one which for two generations had been absorbed in religion of a peculiarly dark and gloomy cast. They led lives of much toil and little variety. They were given to prayer and meditation, to long fasts and deep remorse. Some of them, like Fleetwood, saw visions and dreamed dreams. They had a powerful clergy, whose power had begun to wane, and who saw in such an outbreak of superstitious fanaticism an increased hold upon their flocks. They believed literally and absolutely, and they gave the same weight to the mistranslation, which declared that "thou shalt not suffer a witch to live," that they did to all other biblical commands. The time, too, was peculiarly favorable to such an epidemic of cruel, superstitious fear. They had just emerged from the oppression of Andros, and had finally lost their old charter, dearer to them than anything but their Bibles. Only a few years before they had passed through a terrible Indian war, which had spread fire and slaughter among their villages, had brought mourning into almost every household, and heavy money losses and burdens to the whole community. The soil was peculiarly ready for the crop. Modern science would see in the first manifestations cases of visions and hallucinations as real as they were perilous, and would have recognized also the phenomena of mesmerism and hypnotism. But in those times there was no science, great intolerance, and a vast fund of superstition. The delusion started, it was fanned by the ministers, it spread and raged, reaching north to New Hampshire and south to Boston. A special court was convened, and the work of judicial slaughter began. The promoters lost their heads, and soon turned the fears of the community from the witches to the witchfinders. Like Titus Oates, when he accused the Queen, the Salem informers began to reach high, and to murmur about the Governor's wife. A reaction set in and moved quickly. The executions were stopped, the good sense of the people resumed sway, and the tragedy came to an end. It left in its passage a dark stain on New England history, and there is a tragic picturesqueness about it. But the people who suffered from the delusions, accusers, victims, and bystanders, are to be deeply pitied, rather than sweepingly and unintelligently denounced. The condemnation of these acts should be severe, but we should know what we condemn and why, and our judgment should at least be just.

With the establishment of the government of the Revolution in England, the history of New England entered on a new phase. Four colonies were now in existence, New Hampshire, Connecticut, Rhode Island, and Massachusetts. Maine was a part of Massachusetts. Vermont was still an unapportioned wilderness. Connecticut and Rhode Island were independent charter governments; Massachusetts and New Hampshire crown provinces with liberal royal charters. As now established and arranged they remained down to the period of the Revolution, when they all alike ceased to be colonies or provinces, and became states. This provincial period, lasting over eighty years, was both peaceful and prosperous. There is no use, even if there were space, to follow the history of that time in its details. It was a period of

steady material growth and of advancing wealth and population. There was also a constant, if slow, relaxation of the Puritan strictness, the absorption in religion became less marked, and greater liberality and tolerance of opinion became evident. In Connecticut and Rhode Island was realized, if anywhere, the happiness which is said to belong to nations which have no history. These two colonies went peacefully forward under their free charter governments, extending their commerce, building up their farms and developing their agriculture.

In the crown provinces of Massachusetts and New Hampshire there was more contention in politics, although never of a very serious cast. The people of these two colonies had a royal governor, instead of one of their own choosing, and they were always on the alert to curb his power and to prevent any encroachments. During the first thirty years of the century the contest turned on the question of the Governors' salary. The Governors wished to have the salary settled and fixed at the beginning of each administration. The representatives of the people knew that the power of the purse was their strength, and they insisted that the salary should be an annual grant, voted at the pleasure of the representatives. It was a long fight, conducted on both sides with great obstinacy, and on the side of the colony with much skill. Finally the colonists of Massachusetts prevailed, and thus was won the first battle on the great question of taxation. As we read now the details of this conflict they seem very dry, and sometimes very petty; but, looked at broadly, they threw a strong light on the political sagacity of the people, and we can see plainly that they were contending for a principle on which the Revolution against the mother country was to turn fifty years later.

Besides these domestic questions of the relations between the Governor and the representatives, of the currency, and the land banks, which roused deep interest, the New England colonies were drawn into the great currents of European events, and shared in the fortunes of the empire of which they then formed so important a part. When William and Marlborough engaged in the long wars to curb the power of France, and when Frenchmen fought Englishmen, Dutchmen and Germans in the low countries, the French of Canada let loose their savages, and war and rapine raged all along the New England borders. The English fitted out more than one expedition, and struck hard at the centre of the French power in Canada. They gained some successes, but no permanent results. The burden of the fighting fell on the outlying settlements from Maine to Connecticut, and the people of those villages for years never went to bed without feeling that they might be roused from sleep by the red light of burning houses, and the hoarse whoop of the savage. The Indians were led, and well led, by the French, and especially by the French Jesuit priests, who taught their savage disciples that it was not only desirable, but also pious, to scalp and slay all other Christians not of their own church. These priest-led bands were among the worst the colonists had to encounter, and the most dangerous; that of Father Rasle at Norridgewock, was not destroyed until 1724. Indeed, the wars of William and Anne continued in the new world long after they had ceased in the old, and it was not until 1726 that this scourge was finally removed. The French of Canada had great advantage in organization, in the superior military efficiency which came from a despotic government and in abundant supplies. The popular colonial governments, with their quarrels with their Governors, and their party divisions, were far behind their opponents in activity and effectiveness, and the slowness and lack of concert in the English campaigns resulted in great waste of life and treasure. Yet the strong tide of settlement in these English colonies surged steadily forward, even during these years of war, while the French, with all their efficiency

and organization, despot-governed and priest-ridden, were forced constantly backward by these men and women of the stronger and more independent race.

When Rasle had met his death and his horde of savages had been broken up, and when two years later these lingering wars with the Eastern Indians had finally come to an end, New England entered on a new period of growth and prosperity. It was the time of Sir Robert Walpole, that coarse, corrupting politician and great statesman, one of the wisest and ablest prime ministers England has ever had. Nowhere was Sir Robert's favorite maxim of "*Quieta non movere*" more thoroughly applied nor was it anywhere of greater value than in the English colonies of North America. The wise neglect, the indifference to their politics, of the great Whig leader, allowed the colonies of New England free scope, and they developed and grew apace. Instead of weakening the bonds which bound them to the mother country this policy of non-interference strengthened the ties, and when Walpole, much against his will, was forced into war (1744) in no part of the British dominions did he receive heartier support than in New England. There a plan was devised by Governor Shirley for the capture of the great French stronghold of Louisburg. Massachusetts raised twenty-two hundred men; Rhode Island and Connecticut eight hundred, and the little army was led by William Pepperell and supported by the English fleet under the command of Admiral Warren. The expedition reached its destination safely. The English ships blocked the harbor, the American soldiers stormed the outlying works and invested the town so successfully that the French surrendered (1745). The victory was gained by a mixture of good fortune and good sense backed by abundance of sturdy courage and fighting spirit. It was almost the only substantial glory of an unsuccessful war, and Massachusetts being repaid for her expenditures in gold and copper was able to call in the paper money which had been a curse to the colony and put her finances on a sound metallic basis. This was a valuable reward, but it only paid a debt and this was all. A little incident of the time shows the temper of the people in an interesting light. After the peace, Commodore Knowles came to Boston, and sending press-gangs ashore undertook to impress seamen. A fierce riot broke out, Shirley fled to the castle; British officers were seized and Knowles threatened to bombard the town. The general court managed to restore peace, the officers were released on the one side and the impressed seamen returned on the other. The people were loyal to the great empire of which they formed a part and quite ready to fight for it, but they would not submit to the arbitrary interference of press-gangs with their laws or liberty. The wise policy of Sir Robert Walpole built up the colonies and sent New England volunteers to the capture of Louisburg. The lawless brutality and tyranny of a British naval officer sent these same people into the streets with arms in their hands to fight against the very forces of which they had so lately formed a part. There was a great lesson in this little story, but Sir Robert Walpole had no successor in his policy toward America, while Commodore Knowles had a great many. The result was serious.

But before this result came another war intervened of a very different character from that marked by the fall of Louisburg. This was the great struggle between France and England for the control of the North American continent. The rival powers came in contact along the wild frontiers, and after much scattered fighting and wrangling, open hostilities at last began in 1754. The New England colonies under the lead of the active and enterprising Shirley, entered eagerly into the war and all sent troops. New England men were in the expedition against Niagara, which got no further than Oswego and took part in the battle which resulted in the defeat of Dieskau. The one solid achievement of the campaign was the conquest of

Acadia, and this, like the capture of Louisburg, was effected by New England troops. Despite these successes, the war was sadly mismanaged. The destruction of Braddock's army more than offset the victories in the Northeast. Lord Loudon came out as Commander-in-chief; Shirley was recalled, and matters went from bad to worse. Inefficiency characterized the counsels of the English, and Loudon made things worse by subjecting provincial troops to royal officers and quarreling with the colonial assemblies who disliked his overbearing ways. At this point Pitt, happily for the fortunes of the English, came to the head of affairs, and by his brilliancy and energy everything was changed. Three great expeditions were planned against the French and two, that against Fort Duquesne and that against Louisburg, were successful. The third and most important was directed against Ticonderoga. There were five thousand Massachusetts men in the army, but the English were repulsed and beaten by Montcalm with heavy loss. Lord Howe, the English commander, was killed, and Massachusetts erected a monument to his memory in Westminster Abbey. The only alleviation to this disaster was the capture of Fort Frontenac by a provincial expedition under the command of Colonel Bradstreet, the most distinguished soldier of Massachusetts. The defeat of Ticonderoga, however, did not check Pitt, and his large plans were pushed forward with renewed zeal. In the next year Wolf took Quebec, Johnson Fort Niagara and Stanwix beat the French on the Ohio. The following year Montreal fell and Canada passed into the possession of England. The great war was over. It was settled that North America was to belong to the English-speaking race, who had built up the thirteen colonies along the Atlantic coast.

CHAPTER III.

A COMPENDIOUS HISTORY—Continued.

NEW ENGLAND IN THE REVOLUTION.

THE French war had, however, two other results, besides that of settling the possession of the continent: It relieved the colonies of all fear of invasion from the North, thus freeing them from a sense of necessary dependence on the mother country, and it turned England's attention strongly toward her North American possessions as an important part of the empire, and also as a source of revenue. From this last idea came the seed of the troubles which were destined to separate the colonies from England. Pitt, with his broad views, large sympathies and imperial policies, went out of power. A set of small men came to the front who abandoned Walpole's wise plan of letting the colonies alone, and were incapable of appealing to their patriotism, as Pitt had done. They set to work to govern the colonies more, which merely meant interference with them, and they also decided that they would get money. The new policy made its beginning in Massachusetts. The Sugar Act was revived and enforced, and the officers of the customs began to make seizures. An action against the officers was decided in their favor, and they then moved the court for writs of assistance or search warrants (1761). Oxenbridge Thatcher and James Otis appeared against the writs. Thatcher made a careful technical and legal argument,

but Otis went beyond this, dropped all technicalities and, with burning eloquence, denounced the writs as invasions of the rights of Englishmen. His speech was the first note of the Revolution. As John Adams said, the "child Independence was then born." Otis prevailed at the moment, but Hutchinson got authority from England for the writs while the Governor quarreled with the legislature about raising money to pay the English crews of the ships of war.

These attempts were, however, but a beginning. More serious measures followed in Parliament. A resolution was passed to raise revenue from the colonies and notice was given of a stamp act, and a bill to raise revenue from sugar and other foreign products (1763). The news of the proposed stamp act angered the colonies from one end to the other, and Massachusetts began the work of organized resistance. Under the lead of Otis the people were roused, and a committee of correspondence was formed. The council addressed the King against the act, and when the House met a resolution was passed, despite the resistance of the Governor, that there ought to be a colonial Congress to consider the situation. A letter of invitation went forth to the other colonies. It was the first call to an American Union, the step above all others fatal to England's supremacy. Massachusetts chose delegates, headed by James Otis, and they met in New York in October, 1765, with the representatives of eight other colonies, and formed what has since been known as the Stamp Act Congress, the forerunner of many others.

The movement in America, however, had no effect upon the ministry, who were profoundly ignorant of everything relating to the colonies. They went on with their preparations to enforce the law, with the result that trouble began even before the Continental Congress met. In August, serious riots broke out in Boston. The stamp collector Oliver was forced to resign, his office was wrecked, and the next night the house of the registrar of admiralty and that of Hutchinson were attacked; papers, public and private, were destroyed, and Hutchinson's valuable library was burned in the streets. The citizens in town meeting expressed their abhorrence of these proceedings, and respectable people made haste to disclaim all responsibility for the acts of the mob, but the rioters were not punished, and public feeling increased in hostility to the Stamp Act. The outbreak in Boston was more violent than anywhere else, but the feeling throughout the New England colonies was the same, and this was also true of nearly all the colonies. The Stamp Act Congress met, drafted a declaration of rights and sent petitions to the King and memorials to Parliament. Their work was hardly finished when on November 1st the act went into effect. The resistance of the colonies was general. Stamp collectors were forced to resign, and no stamps were allowed to be sold. At first, business was suspended and the courts stopped, but in a short time both resumed their operations, disregarding the law and using no stamps on the papers when the act required them.

Meantime there was a change of ministry in England. Grenville went out and the Rockingham Whigs came in. The new ministry brought in a bill to repeal the Stamp Act. It was supported by Pitt in a great speech in the Commons and by Camden in the Lords, and passed triumphantly. The bill, however, while it repealed the Act declared the right of Parliament to impose taxes, but the colonists did not at the moment stop to consider this, which was really the root of the controversy. They received the news of the repeal with an outburst of loyalty and delight. Some of the colonies voted statues to Pitt and the King, and Massachusetts placed portraits of Conway and Barré in Faneuil Hall. New York voted indemnity to the sufferers from the riots, and Massachusetts followed suit, but inserted in the Act a free pardon to the rioters, which was much disliked in England.

The repeal of the Stamp Act in reality settled nothing. Not only the declaration of the right of Parliament to tax the colonies remained, but the sugar act was still in force, and although the duties under it were reduced, it continued to give a great deal of dissatisfaction, especially in the Northern colonies. Then the Rockingham ministry soon went out of power, and under the next combination which was made with Chatham nominally at the head, Charles Townsend, Chancellor of the Exchequer, brought forward in 1767 a new scheme for raising revenue in America. Under Townsend's bill various articles, such as tea, paints, paper, glass, and lead, were to bear custom house taxation in the colonies, and the custom house system was reorganized with a board of revenue commissioners for America, which was to sit at Boston. On the passage of these new bills, the opposition in America to Parliamentary taxation again showed itself. Governor Bernard refused to summon a special session of the general court to consider the new act, but a public meeting was held in Boston, at which resolutions were adopted to encourage home industry and domestic manufactures, while a committee was appointed to obtain subscriptions to a non-importation agreement. This new scheme of resistance spread with rapidity. It was imitated in Providence, New York, and Philadelphia. It was also adopted in Connecticut, but in New Hampshire the movement was checked by the influence of Governor Wentworth. When the general court of Massachusetts met in the fall of the year (1768), a petition to the King and letters to the ministry, setting forth the rights of the colonies were agreed to, and a circular letter to the other colonies inviting co-operation in defense of their rights, was also adopted and issued. This Parliamentary opposition was supplemented soon after by a serious popular riot, which broke out upon the seizure of the sloop "Liberty" belonging to John Hancock, who was charged with having smuggled a cargo of wine from Madeira, and the newly appointed revenue commissioner fled the town to the British barracks on Castle Island. The House took no notice of the matter, and all attempts to prosecute those engaged in the riots failed, while orders from Lord Hillsborough to rescind the circular of the last general court were disregarded.

It had already been determined in England to send troops to Boston, and when the news of this last riot arrived, additional regiments were ordered from Ireland. The coming of an officer sent by General Gage to provide quarters for these troops, led to a town meeting and then to a convention of delegates from the other towns in Massachusetts. The action of the convention was moderate, and went no further than a petition to the King and a letter to the agent. The day after the adjournment of the convention troops from Halifax arrived, and under Gage's orders were quartered in the town. All buildings were refused to them, so that one of the regiments was forced to encamp on the Common, while the others were lodged in Faneuil Hall and the Town House. When General Gage arrived the authorities still refused to provide houses for them, and he was finally obliged to quarter his troops in houses which he hired and paid for himself. The presence of the troops excited still more the popular resistance, and when the House of Representatives came together on the 31st of May, 1769, they resolved against the presence of the troops, and petitioned the Governor to remove them during the session. This he declined to do, and the legislature therefore refused to attend to anything but the redress of grievances. They accordingly voted a petition asking for the removal of Bernard and denounced a standing army. Unable to do anything with the representatives of the people, Bernard prorogued the court and departed, leaving the government in the hands of Hutchinson.

These movements on the part of the British Government caused a feeling of

resistance which was most strongly manifested in Massachusetts and Virginia, but which also spread to the other colonies. Rhode Island came vigorously into the non-importation agreement, and so now did New Hampshire, forced thereto by the threats of non-intercourse on the part of the other colonies. These movements, however, were merely beginnings. In the condition of popular feeling excited by the presence of the troops in Boston and which continually grew worse, it was only a question of a short time how soon an actual outbreak would occur and the trouble pass from the stage of words to that of deeds. There were continual brawls in the town between the populace and the soldiers, and at last on March 5th, 1770, the culmination came. There had been trouble during the afternoon between the soldiers and the people, and in the evening, a guard at the State House finally fired into the crowd, killed three persons and dangerously wounded five others. In a moment all was excitement. Bells were rung and the population poured into the streets. It was with great difficulty that a general combat was prevented. The next morning there was an excited assembly held in Faneuil Hall, and in the afternoon a town meeting, which demanded the immediate removal of the British troops. A committee with Samuel Adams as chairman went before the Lieutenant-Governor with this request. Hutchinson undertook to disclaim any authority over the soldiers, but Adams answered that a clause in the charter gave him that power. Then Hutchinson said that Colonel Dalrymple was ready to remove one regiment. "Sir," said Adams, "if you have authority to remove one regiment, you have authority to remove two." The town meeting voted the Governor's offer unsatisfactory, and at last the authorities gave way and both regiments were removed to the forts in the harbor, to be known thenceforward as "Sam Adams's regiments."

This riot, which was known in Massachusetts as the "Boston Massacre," did much to alienate the people from England and had a profound effect throughout the country. The officers in command of the troops were defended by John Adams and Josiah Quincy and were fairly tried, but the funeral of those killed in the riot was celebrated with great pomp, and the day was set apart to be commemorated in each ensuing year, thus keeping alive the bitter hostility which it had caused.

Meantime Parliament had repealed all the obnoxious duties except that on tea. Like every step taken by England, it was too late and it was insufficient. It was a question of principle which was at stake, and they might as well have left all the duties as one. The repeal had no effect in Massachusetts, where the feeling against the British continued to grow and where the Governor and the assembly were engaged in a bitter quarrel, first over the attempt to have the legislature sit in Cambridge and then about the payment of the Governor's salary from England. Violent outbreaks moreover were no longer confined to Massachusetts. In 1772 the "Gaspé," an armed schooner of the revenue service which had given great annoyance to the people of Rhode Island by endeavoring to enforce the revenue laws, was enticed into shoal water by a schooner to which she had given chase and was then boarded and burned by a party from Providence. An act of Parliament was passed to send to England for trial all persons who were concerned in burning His Majesty's ships, a reward of 600 pounds was offered for the discovery of the parties who had destroyed the "Gaspé," and a board was appointed to examine into the matter. But, although the perpetrators were well known, no evidence could be obtained against them, which shows most strikingly how universal the spirit of resistance had become.

Meanwhile the contest between the Massachusetts Assembly and the British Ministry continued with constantly increasing asperity. But more decisive events than debates and petitions were fast approaching. A crisis was at hand, and it first

became acute in New England. In these colonies the Tory element, which clung to the English interests, was very small. Outside of Boston, where were gathered the officers of the Crown and the richer portion of society, there were hardly any supporters of the Royal government to be found. The traditions of New England, too, all pointed to resistance. The people were homogeneous, the descendants of the Puritans who had maintained independent governments for the first fifty years after the settlement of the country. They had defied Charles I. successfully. They had refused to bow the knee to Cromwell, although they followed and admired him. They had made a long and stubborn resistance to Charles II. They had risen against the government of James, and overthrown Andros and put him in prison. During all the provincial period the legislature of Massachusetts had opposed the royal governors steadily, and, in the main, successfully, while the governments of Rhode Island and Connecticut had remained independent under their old charters. To such a people resistance to any interference with their rights was most natural, and the idea of independence came easily. In many of the other colonies the Crown had on its side the influence of the established church, but the church of England had practically no existence in the New England colonies, and the belief that the ministry were proposing to extend the Episcopal system to all the American colonies had the effect of throwing the entire force of the powerful clergy on the side of the patriots, and thus deprived the Crown of those who would naturally have been its strongest and most conservative supporters. Everything was ripe, therefore, in New England for an outbreak, and it soon came.

All the taxes to which the colonists objected had been abolished except that on tea, and this the ministry determined to collect, not for the sake of revenue, but for the sake of principle, which was fatal, because the difference arose, not over the amount of the taxes, but over the principle involved in them. Thus it came about that, at the close of the year 1773, three East India ships loaded with tea arrived in Boston harbor. Town meetings were held, and every kind of public protest made against the landing of the cargoes, but all in vain; and, on the evening of December 16th, a body of men disguised as Indians boarded the tea ships, and flung the tea into the harbor. It was a decisive act. As soon as the news of the destruction of the tea reached England, radical measures were determined on and rapidly passed through Parliament. One closed the port of Boston; another practically abrogated the charter of Massachusetts. A third provided for the trial in England of certain Americans. The fourth was for quartering troops in America, while the fifth, known as the Quebec act, gave to the Catholics of Canada full freedom of worship, and extended the boundaries of the province. No more fatal legislation could have been devised. It not only closed the door to all reconciliation with Massachusetts, but made the cause of Massachusetts that of every American colony, for all alike were threatened with the loss of their governments and their freedom by such bills as these. Rhode Island and Connecticut had already followed the example of Massachusetts in their opposition to the importation of tea, and they and all the other colonies now began to take steps, not merely to extend the non-importation agreement, but for the assembling of a Continental Congress. Instead of taking advantage of the misfortunes of Boston, the other towns of New England, which were likely to be benefited by the destruction of the commerce of the capital, came eagerly to the relief of her inhabitants.

In 1774 the first Continental Congress met, but meantime General Gage had arrived as Governor of Massachusetts, with a strong military force. While Congress deliberated, events in Massachusetts moved fast. The people organized in towns

and counties, and formed a separate provincial government, while Gage was utterly unable to do anything with the general court, and at last prorogued it in despair, after moving it back and forth from Salem to Boston. He also fortified Boston Neck, and seized powder in Charlestown belonging to the province. The example of the people of Massachusetts, in preparing to defend themselves, was followed by those of Rhode Island, where the cannon and the batteries at Newport and Providence were seized, and in New Hampshire, where the patriots under the lead of John Sullivan, took possession of the fort.

Actual hostilities were now advancing with rapid strides. The Crown, on one side, had its soldiers under a military governor. The people were not only organizing for civil government, but also in military companies. The appeal to arms could not be long delayed. It came finally, as might have been expected, from Gage's determination to seize munitions of war. One attempt of this sort was baffled at Salem. On the 19th of April he made another, directed against Concord. The troops were sent secretly from the capital, but the news of their coming had already been spread through Middlesex by Paul Revere, acting for the patriots of Boston. When the British reached Lexington they found a small body of minute men drawn up on the green. There was a brief parley, an interchange of shots, a few Americans were killed, and the American Revolution had begun. The British pressed on from Lexington to Concord, where they expected to find the stores, but, if there had been any there, they had been already removed. They did find, however, more minute men. There was a fight at Concord Bridge, and this time the loss was not wholly on the American side. Then the order was given to the British troops to return to Boston. As soon as the retreat began the American militia, pouring in now from every direction, hung on their flank and assailed them with a galling fire. The retreat soon became a rout and nothing but the arrival of Lord Percy with a fresh detachment enabled the broken regulars to get back to Boston.

The fight at Lexington and Concord brought all New England to the rescue of Massachusetts. Militia poured in from all directions, and in a short time twenty thousand men were in the neighborhood of Boston besieging the British army. On the night of the 16th of June the Americans seized Breed's Hill, in Charlestown, a point which commanded Boston and would have made it untenable by the enemy. On the morning of the 17th the British perceived what the Americans had done, and that during the night earthworks had been raised. They immediately prepared to drive the Americans away, and the first battle of the revolution ensued. The men of Massachusetts under Prescott, the men of Connecticut under Putnam, the men of New Hampshire under Stark fought side by side during that hot summer morning against the superior and disciplined forces of England. Twice they flung back the British attacks, and gave way the third time, retreating in good order, only because their ammunition was exhausted. The British held the hill, but the slaughter had been frightful, over a thousand officers and men of the English troops having been killed and wounded. Congress, spurred to activity by the news of Lexington and Concord, had just appointed George Washington to take command of the forces before Boston, and make them the Continental army. Washington was on his way to his post when he was met by the news of the battle of Bunker Hill. He asked but one question, "Did they fight?" and when told how gallantly the Americans had withstood the assault, he cried out, "Then the liberties of the country are safe," and pressed on to his destination.

Lexington and Concord had also, as has been said, stirred New England, and

while her minute men were going to the rescue of Boston, others under the lead of Ethan Allen had seized the fortifications at Ticonderoga and Crown Point. The British now held nothing in New England except Boston, where their army was encamped. By the 2d of July Washington was in Cambridge, and taking command of the army began the siege of Boston. Through those long and weary months it is not necessary to follow him, The courage and genius of the great commander triumphed over all difficulties. Despite the return of many of the militia to their homes he maintained his siege line intact. With hardly any powder in his camp he kept an unwavering front. He had the guns captured at Ticonderoga brought down over the snow on sledges under the command of Knox. He managed to accumulate enough powder during the dreary winter months to answer his purpose and in the spring all was ready. He then seized on Dorchester Heights, where he threw up earthworks, and it became evident at once that Boston was untenable unless the British could drive him off. They did not dare to make an assault, and on the 17th of March they evacuated Boston, taking their army to Halifax, and Washington marched in in triumph.

With the conclusion of the siege of Boston the war drifted away from New England, where it had begun. When Burgoyne came down from the North, he sent a detachment of Hessians to seize and destroy American stores at Bennington. The farmers of New England under the lead of Stark fell upon the invading troops and defeated them overwhelmingly in August, 1776. Still later in the war the British landed at Newport and drove the Americans from the island, but the victory had no permanent result, and after the British fleet sailed away to Halifax in 1777, no part of New England ever came again under the control of the British crown.

The New England troops, however, fought all through the war, and, although when Washington first took command of the army their independent ways annoyed him he came at the end to regard them with the same confidence which they implicitly reposed in him. At the close of the Revolution, although since the battles at Bennington and Newport New England had not been called upon to defend her own territory, the bulk of the Continental army which followed Washington in his last campaign was composed of New England troops. At a later time, when the National Congress was disputing about the state debts, it was intimated that New England would get much from the refunding acts, while she had suffered but little during the war. Statistics were called for and furnished. They showed that Massachusetts alone had sent more men to the Continental army than all the states south of the Potomac together, which closed the branch of the discussion relating to New England's revolutionary services. The fact was that the Revolution not only began in New England, but that, after it had left her borders, she gave as freely as ever to the cause of Independence, and to securing for all the colonies that which she had been fortunate enough to obtain for herself at the outbreak of hostilities.

CHAPTER IV.

A COMPENDIOUS HISTORY—Continued.

THE NEW ENGLAND STATES.

THE close of the war which procured the independence of the United States left the New England colonies, now American states, like all the others, with many burdens and in the demoralized condition which a severe struggle is sure to produce. Trade had been disorganized and thrown out of its accustomed channels. Domestic industries had not yet been established. The states were all heavily in debt, and the taxes to raise the necessary revenue were severely felt. To these public burdens were added private debts which bore heavily on the body of the people. The Confederation was feeble and inefficient. The states did not pay their quotas for the expenses of the Federal government, which was fast sinking into complete imbecility. Everywhere signs of disintegration were manifested. West of the mountains the new settlements were threatening to break off from the old states. In New England the men who had settled the Green Mountain region were in conflict with New York and New Hampshire and were quarreling over that region and threatening secession. The people of Maine were discussing the project of separating themselves from Massachusetts. The general condition of the country was dangerous and unpromising, and public matters went steadily from bad to worse. Rhode Island had already entered upon the road of paper inflation, and everywhere there was a demand for paper money and measures of repudiation. In 1786 an armed mob surrounded the legislature of New Hampshire, demanding a remission of taxes and an immediate issue of paper money—an outbreak which was repressed only by the vigor and firmness of Governor Sullivan. In Massachusetts the state of affairs was worse, and attracted the attention even of the feeble Congress of the Confederation. An actual insurrection broke out there, under the lead of Daniel Shays. In the western part of the state the courts were closed, and disorder reigned. Thanks to the firmness of Governor Bowdoin, however, militia were raised and marched under the lead of General Lincoln to the scene of the disturbance. The rioters dispersed on the arrival of the troops, but much suffering was caused, and the condition of popular feeling remained threatening and dangerous.

The Massachusetts outbreak, however, had one good effect. It stimulated actively the movement already on foot for the formation of a better national government, under the lead of Washington and Hamilton. In September, 1787, a year after the Shays rebellion, the constitutional convention met at Philadelphia, and after long discussion finally formed the constitution of the United States and submitted it to the people. The ratification of the constitution gave rise to a sharp political struggle in each state. In New England, Connecticut, which was in better condition than the other states, adopted the constitution easily and quickly. In Massachusetts, the largest state but one of the thirteen, the struggle was fierce and prolonged. The delegates representing those elements which had been engaged in the Shays rebellion offered a bitter opposition to the new constitution, and the ratification was only carried at last by the slender majority of nineteen. New

Hampshire followed later, but Rhode Island stood out and declined to ratify. Nine states were necessary to put the constitution into operation, and eleven ratified,—Rhode Island and North Carolina alone refusing. Elections therefore took place under the new instrument, and on the 30th of April, 1789, Washington was inaugurated as the first President of the United States, at New York.

The new government, under the control of Washington and Hamilton, showed strength from the start, and its politics were so successful that, supplemented as they were by threats of discrimination against the two recalcitrants, Rhode Island at last gave way, and in 1790 ratified the constitution, and became a member of the Union, an example soon followed by North Carolina. Despite the early divisions, New England was quick to appreciate the great benefit of the new national government, and rallied strongly and solidly to the support of Washington and the Federal party, which was the party of the Union. This was entirely natural, for no portion of the country benefited more than New England from the wise measures of the national government, and from the peace and order which it brought to all parts of the country. The Senators and Members of Congress from New England gave a united support to the funding measures and tariff policy of Hamilton, and stood by Washington in his resistance to the French influences, which were by no means popular among the conservative people of the Eastern states.

In 1791 the inhabitants of the Green Mountain region finally settled their difficulties with New York, as they had already settled them with New Hampshire, and were admitted to the Union as the state of Vermont, making the fifth New England state.

New England sustained Washington at both his elections, and throughout his administration. They also supported John Adams, their own candidate, when he was chosen to the Presidency in 1796, and they again gave him their united vote in 1800, when he was defeated. The election of Jefferson was a sore trial to the bitter Federalism of New England, but the success of his first term, and the immense prosperity which came to American shipping, owing to the great Napoleonic wars in Europe, modified the opposition of the people. At Jefferson's second election even Massachusetts voted for the Jefferson electors, while Connecticut alone stood out for the Federalist candidate. This condition of affairs, however, was of short duration. Jefferson's feeble policy toward the great foreign powers, which were both alike outraging the rights of the United States, resulted in an embargo, which destroyed the New England shipping without doing any serious harm to France or Great Britain. Thereupon New England returned to the Federalist party, and entered upon a period of intense opposition to the national administration. So bitter, indeed, was the feeling that it led to the discussion of secession projects, which came to nothing, but which served to inflame the hostility of the people. At last the injuries and humiliations which we suffered developed a national party determined to fight some one, and which was at open revolt against the weak and shuffling attitude of Jefferson and Madison.

This new party forced on hostilities with England, and in 1812 war began. In New England the war was excessively unpopular, as the embargo had been before. The people there felt that, if there was to be war with any one, it should be with France; but a war with England seemed to them ruinous and unnecessary. So extreme was the feeling that the duty of standing by the country, when it was once at war, without regard to anything else, was forgotten. The states refused to send militia beyond their borders, and, in their political capacity, gave a sullen refusal to all demands for aid from the National government. As the war went on, and the

consequent suffering increased, the hostility to the National government became more and more bitter, and at last culminated in 1814 in the famous Hartford convention, composed of delegates from the New England states to consider what they should do for their own protection. Fortunately the more violent leaders were excluded from the convention, which undoubtedly, in other hands, might have led to open separation. As it was, they agreed to and published an address directed against the national administration, and declared the right of the states to interpose in the case of oppressive laws by Congress. This doctrine of "interposition" did not differ in principle from the doctrine of "nullification" of the Virginia and Kentucky resolutions of an earlier time. Fortunately, however, even before the committees of the convention could reach Washington, peace was declared.

But although the New England states, as such, and the dominant party in them, which owed its strength to the wretched policy of the National administration, offered this opposition to the war, the people of New England took an active part in the struggle. They furnished a large proportion of the seamen to fight the brilliant naval actions, which were a succession of almost unbroken victories, and New England regiments followed Scott in the hard-fought battles at Lundy's Lane and Chippewa.

With the close of the war the old questions which had divided parties were settled, and a period of political inactivity ensued, while new questions were taking shape. At the second election of Monroe only one elector was found to vote against him, and thus prevent his having the unanimous electoral vote, which Washington alone in our history has attained. In New England itself this period was marked by many changes. The Federalist party disappeared. The power of the Congregational Church, the old church of the Puritan founders, was broken, and in 1820, by the revision of the constitution of Massachusetts, the taxation for the support of the church came to an end. In 1819 the province of Maine formed a constitution, and asked for admission to the Union, and in the following year she was admitted as a separate state of the Union, with the consent of Massachusetts, and as a part of the famous Missouri compromise. Maine was the sixth New England state, and completed the group as it stands to-day.

The separatist movements in New England ended with the Hartford convention and the war of 1812. Never again did those states enter on a path of resistance or opposition to the National government. The lesson had been learned, and they gave their whole strength and support to the cause of Union and Nationality from that time forward. The political issues which had thrown New England into opposition to the National government, as has been said, disappeared after the peace with England in 1815; but they had brought changes which had an important economic effect upon the Eastern states. The wealth of New England had always been drawn from the sea, either by the fisheries or by the carrying trade, which she practically monopolized, and which reached enormous proportions during the struggle between France and England, when commerce sought the protection of a neutral flag as the only opportunity for existence. The successive embargoes and non-intercourse acts followed by the war had the effect of stopping for a time the commerce of New England. There were periods preceding the war when her ships rotted at their wharves, and her seamen paraded the streets of the sea-coast cities demanding bread. These successive blows to the shipping had the effect of turning the enterprise and capital of New England into new channels. The war and the embargoes acted as prohibitory tariffs, and powerfully stimulated the growth of domestic industry.

The beginnings thus made from necessity were encouraged by the protective

tariff of 1816, passed under the leadership of Calhoun and supported by the South. This tariff had successors, and the policy of protection thus embodied in the National legislation pushed New England along the line which she had been forced to adopt at the time of the war. The New England states rapidly became industrial and manufacturing communities. On the other hand the shipping, which had been carefully protected by the tonnage laws passed at the beginning of the government, after the war of 1812 lost all its protection through the making of commercial treaties, in which all discrimination in favor of our own shipping was abandoned under the favored nation clause. Thus the National government on the one hand protected industry by its tariffs and withdrew by its commercial treaties the protection which had formerly been extended to the shipping. In this way manufacturing became very profitable and the carrying trade less and less so. The result was that the energy and capital of New England changed its channel entirely, and by 1830 the predominant interest of New England was industrial and no longer commercial, although her shipping was maintained until the introduction of iron vessels and the war of the rebellion dealt it a final blow.

As industrial communities the New England states gave, as a rule, a steady and undivided support to the Whig party and to the Whig policies of tariff protection and internal improvements. These were the lagacies of the Federalist party and on the lines laid down by Hamilton, and to these policies and the party which represented them, New England has been true from the beginning.

The economic and financial questions of what may be called the Whig period were, however, gradually superseded by the rise of the anti-slavery question, a moral issue which went to the very roots of politics and society. The agitators who under the name of Abolitionists first roused the country to the evil of slavery came chiefly from New England. Garrison and Phillips were both Massachusetts men, and John Quincy Adams in his great fight for the right of petition gained the first victory for the anti-slavery cause in Congress. At the outset the anti-slavery agitation was received with as much aversion in New England as elsewhere in the North, but it gained ground there more rapidly than anywhere else, and after 1850 New England became the seat of the strongest opposition to the slave power. When the Whig party went to pieces, New England came out strongly in favor of the Republican party, to which it has ever since given an almost unbroken support.

New England voted for Lincoln in the election of 1860, and when the call came for troops in 1861, it was a Massachusetts regiment which first reached the National Capital, and it was the blood of Massachusetts men which was first shed in Baltimore in the great war for the Union then begun. The six Puritan states sustained Lincoln and the war with the deepest enthusiasm, and gave both men and money to the national cause without stint.

What New England did for the Union is best shown by the number of men furnished to the national armies in four years :

STATE.	TOTAL, NUMBER FURNISHED.	QUOTA.	POPULATION.	AGGREGATE REDUCED
				TO A 3 YEARS STANDARD.
Maine,	72,776	73,587	628,279	56,776
New Hampshire,	34,629	35,897	326,073	30,849
Vermont,	35,262	32,074	315,098	29,068
Massachusetts,	152,048	139,095	1,231,066	124,104
Rhode Island,	23,699	18,898	174,620	17,866
Connecticut,	57,379	44,797	460,147	50,623

Seven loyal states furnished men in excess of their quota, and of the seven four

were New England states. Taking the number of men furnished reduced to a three years' standard, we find that there was one three-year soldier for every ten of the population, and one in every two men, allowing one man of military age to every five of the population. By states we find that there was approximately one soldier to every eleven of the total population in Maine and Vermont, one to every ten in New Hampshire, Massachusetts and Rhode Island, and in Connecticut the proportion was one to nine.

Since the war New England has gone on with her great industrial development and has become one of the most populous as well as the richest part of the country. Her agriculture has declined with the opening of the fertile lands of the West, but the energy of her people has met this changed condition as successfully as it has all others, and her prosperity has not been impaired, but has gone forward as before.

The present century has witnessed marked changes in the population of the New England states. The colonies of New England were all settled by Puritan Englishmen, and during the colonial period, unlike the other colonies, they received practically no additions from other sources. A few Huguenots in Massachusetts and a Scotch-Irish settlement in New Hampshire were the only additions different from the original stocks, and these were trifling. Palfrey says in his history that for a hundred and fifty years after the first settlement, the people of New England had no mixture of blood, and during that period were probably the purest and most unmixed English stock in the world. With the opening of the West early in the present century, and even before, the people of New England began to emigrate westward. They pushed up the valley of the Mohawk and through northern New York, and thence the movement has continued westward through all the Northern states of the Union down even to the present time, until to-day it has reached the Pacific Ocean in the states of Oregon and Washington. The descendants of the Puritans and the Pilgrims have thus formed a large, and in many cases a dominant, element throughout the Northern tier of states, and they have carried with them their habits, traditions, and modes of thought, exercising in this way a most profound influence upon the growth and development of the United States.

During the middle of this century the period of freedom from foreign immigration, which had been so characteristic of New England, came to an end. Subsequent to 1840 there was a very large Irish immigration to the New England States, and in the most recent times there has begun an immigration of French from Canada, and of Scandinavians and Germans. The result is that a large proportion of the population in Massachusetts, Connecticut and Rhode Island is of foreign birth and parentage, but the vigor of the original stock is so strong that it now seems more than probable that they will succeed in assimilating these additions—to the extent at least of impressing upon them the principles and the beliefs which have been characteristic of New England from the beginning of her settlement. What the future may hold, no man can say, but even this brief outline is sufficient to show the character of the people, the wonderful success they have attained, the part they have played on the great national field, and the far-reaching influence they have exerted in the upbuilding of the United States. There is no reason to doubt their ability to cope with the problems of the future as successfully as they have with those of the past. The people who effected a settlement on the bleak and rocky coasts of New England, who wrung a support from her stormy seas and barren soil, and who there built up rich and powerful communities, have the strength of character and of intellect which will enable them (unless some change which no man can foresee shall come) to play in the days that are yet to be the same great part in the history of their country as that which they have taken in the days that are gone.

CHAPTER V.

NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION.

By HENRY L. DAWES.



MORE than one hundred years ago (1786), in answer to an inquiry of a Virginian traveling in New England for a better knowledge of her institutions, John Adams gave this recipe for making a New England in Virginia—"Town meetings, training days, town schools and ministers." He later recorded in his diary his clear conviction that "the meeting-house, the school-house and the training field are the scenes where New England men are formed." He adds that Colonel Trumbull, who was present, "agreed that these were the ingredients." The growth and development of a century under a government in which all the forces which make up power and influence and character have free play and work out their legitimate results, leave little ground, in the mind of the student of national life, to question the soundness of the philosophy of Mr. Adams. It is not difficult to trace to these sources the conspicuous part New England has taken in shaping and directing the ultimate course of those institutions of government which distinguish our own from those of other civilized nations. The colonies had, but three years before the utterances here quoted, thrown off the yoke of dependency, and there were yet as many more before our nationality had actual existence. But the builders of the nation were born many years before, and were the peculiar and distinct product of a growth altogether different from contemporary life. The ancestry, the very stock, the issue from generation to generation on lines and in strains and qualities well defined, and of the highest type of their kind, whether it be of the Pilgrim and Puritan blood of New England, or that of the Hollander of New York, the Cavalier of Virginia or the Huguenot of Georgia, were, at every stage of production and growth, picked, selected, chosen, as if for the very purpose of producing the "makers" of such a nation as this. They were not any more one people in their mental make-up or habits of life than they were in their origin; and the character and aptitude of such had taken form and bent, under the influences of a training from generation to generation which had nothing in common among the different races from which they sprang. And yet they so complemented each other when brought together in the formation of one common nationality and in the attempt to give the combined result unity, stability and power, under none other than self-imposed restraint that their work, standing the test of a century, has become a marvel in history and a model among modern governments. It is a work in which all took

part, and on which all have left the impress of their own convictions of what were necessary constituents of a government they each aspired to erect and maintain. The government under which we live is not the work of the Pilgrim, or Puritan, the Hollander, the Cavalier, or the Huguenot, but the combined work of them all, and is the resultant of the patriotic zeal and wisdom of all.

In considering the influence New England has exerted, or in attempting to measure the share it has had, in giving shape to or in maintaining our institutions, it is not necessary to disparage or minimize the part in either shared by the people of other sections of the country. The government was made for all and by all, and any search for evidence of the predominance of the controlling political thought of any one section over that of others in this work, which all have wrought, would be alike unbecoming and fruitless. A study, however, under these limitations, of the part New England performed in the laying of the foundations and rearing of the structure of our government, as well as the influence it has continued to exert in maintaining and giving direction to the administration of public affairs under it, will prove highly instructive and useful.

When the work of constructing a government for this people was undertaken in 1787, but three of the six New England states took part in it. Rhode Island stood aloof till after the work was completed. Vermont was claimed by both New York and New Hampshire as part of their territory and had as yet no existence as a colony or state, and Maine was only a district of Massachusetts and under her government. It was to be a government over a people then numbering a little short of four millions, dwelling in small groups, and in neighborhoods remote from each other, sparsely scattered over an area of more than eight hundred thousand square miles, and having already thirteen different state governments of their own. And it was to be a government so constituted and adjusted, in all its parts, that while it was to be over all these thirteen different state governments, they were still to be preserved and maintained by it. It was also to be a government self-imposed by the governed themselves. It is not to be supposed by this statement of leading features of the completed work, that any such problem was formulated beforehand, and submitted for solution to those who formed this government. It must be evident to every student of the diverse character of the constituents composing the body which wrought this work, and the complications in which it was involved from the outset, that had what was actually accomplished been submitted in the beginning as the one purpose of its deliberations, the work would never have been undertaken, but would have been abandoned in despair. It was because those who made this government had a faith in the power of a people to govern themselves which never failed them in the darkest hour, that they builded so much better than they knew, and that the result has stood the test of a hundred years. By this faith they walked, and wrought, and it led them, hardly knowing it themselves, to the establishment of this great and powerful government of ours.

It has been already stated that this government was not the work of a section or of any one of the many different nationalities which had planted colonies on these shores, but that all phases of colonial life out of which thirteen different states had sprung into existence, had participated in and impressed themselves upon the work. Our inquiry is, what part had New England in its formation, and how considerable has been its share in that maintenance and administration of its affairs which have extended its jurisdiction over a people now counting seventy millions and a territory embracing more than three millions of square miles.

New England represented in the Convention which framed our government less than one-fifth of the four millions of the people, and less than an eighth of the terri-

tory over which it was established. It constituted also the extreme northern portion, least promising in possibilities of future population or power. Neither its climate nor its soil held out any hope of a development or growth that would bring to it influence in giving either character or direction to a government which was to be controlled by numbers, or swayed by the impulses of a material prosperity, dependent upon conditions it could not change, or even modify. Yet it will be found, upon examination, that, both in the formation of the government, and in its maintenance and administration for the hundred years it has existed, the voice and influence of New England has been ever present, and has been potent altogether beyond any proportion indicated by its relative numbers or area.

New England was represented in the Convention which made that government by men who had a distinctive character traceable to an origin and a training of a hundred and fifty years, unlike that of those representing any other portion of the thirteen original states. This it was that constituted an effective force felt to the end of the deliberations of that body. Indeed the germ of our institutions is to be found in the first written constitution known in our history, the compact for their own government signed in the cabin of the Mayflower by the Pilgrims who landed at Plymouth in 1620. This germ had taken root in New England soil and had been bearing fruit after its kind all the years that had intervened. It developed as the colony expanded and grew into the distinct community known in 1787 as New England. The town-meeting, in which the people learned how to legislate for themselves and how to obey laws of their own making, was its first fruit, reaching at that time a degree of development hardly improved upon in the Convention itself. The rule of the majority had governed these meetings for more than a hundred years. Those who organized this town government in a land of savages, were compelled also to stand guard in its defense all the way from its inception to its completion. Indeed they worked much as those of old who re-built the walls of Jerusalem, each with his weapon in his hand. Hence the necessity of the "training days" spoken of by Mr. Adams, for all were soldiers bound to bear arms for the common defence, their sole reliance. The town school was a like necessity, for uneducated effort was sure to have in it more of hurt than of help. And it must be a *common* school, for the lot of every one was a common lot. Duty and responsibility were no respecter of persons, and required preparation without distinction. As early as 1647 they had embodied in their fundamental law, and it underlies all the institutions they have since reared, that the benefits of a common-school education should be brought within the reach of every child in the state, however poor, and that the property of the state should support a system of schools adequate to confer this universal education.

And they forgot not, in all they did and suffered, that they had come to these shores in order that they might the more freely worship God according to the dictates of their own consciences. Hence that deep solicitude which pervaded all minds, at all periods of their growth, to rouse and stimulate a religious life. The meeting house rose with the school house in every town and hamlet, and the parish was coterminous with the civil authority. The combined effect in moulding New England life, of these four "ingredients,"—town meetings, training days, town schools and ministers,—had been so marked that Mr. Adams believed that with them he could plant another New England in the heart of Virginia.

From among a people thus trained for three or four generations, New England selected the choicest product of her schools to join those of other sections in erecting a nationality common over all, in all its attributes, powers, and limitations. There were great men from all parts of the country in that Convention, whose names are

conspicuous in our history, and it is no part of our design to weigh them off against each other, or institute any comparison of the share of any one in its work with that of another. What is claimed for New England is that her ideas, those she most strongly maintained in her own body-politic, found in the end most prominent place in the new government to which all subscribed, and which has been maintained over all with slight modification to this day. One might go farther and claim that the changes themselves, important as they indeed are, have only drawn it the closer to the practical application of the New England theory of government. If it be true that Hamilton of New York, Madison of Virginia, Wilson of Pennsylvania, and others outside of New England have justly gone into history as the leaders in the great work, it is all the more significant that even they were led to accept and embody in the result so much that had first taken root in New England. To draw out, in this connection, all that is traceable to this origin in the fundamental principles and unique methods which distinguish our government from all others would compel an analysis of the whole structure of our institutions, as well as a critical study of the sources, whence come the strength of personal character and social organization in every part of our common country, altogether beyond the limitations under which we write. It is not necessary to go farther than the assertion that the idea of a self-imposed government, without which our whole governmental structure would crumble into worthless dust, was, in this country at least, first put in form and force in the compact heretofore spoken of, by the Pilgrims in the cabin of the Mayflower, and first justified its existence and efficacy by a century of successful trial in New England.

Hardly less remarkable is the marvelous success of the founders of the republic in the application of this principle of self-imposed government, till that time a failure, to the complex system of a government over governments already established, and at the same time over the people which composed those governments. But the historian of New England directs attention to the fact that this very application of the principle of self-government had already proved its possibility and usefulness in the town system peculiar to New England. For long years under colonial government, and during all the intervening times before the formation of the republic, local legislation for all the towns was the work of the town meeting, called in very truth the Town Parliament, in which all voters participated in the enactment of the laws. At the same time the necessity of a common defence, and a common development compelled a Union of towns, in measures of common interest, to be binding upon all. The voter spoke and acted in the town meeting, and the town voted and acted in the meeting of towns. Thus the possibility of a self-imposed government over states, and at the same time over the individuals who compose the several states, as one whole, had been demonstrated in New England, before delegates from the various sections of the country and from the experiences of their own peculiar systems, met to formulate out of the teachings of their several experiences and exigencies a common government adequate to all their needs. There had been a little republic of this character in Connecticut among her early towns, so successful in securing all the ends of good government and at the same time the protection of the citizen in the enjoyment of all just rights of person and property, that Roger Sherman and his associates took its plan to the Convention which framed our complex system of a free government binding on all the states and on all the citizens which make up the states; so framed that the citizen puts upon himself the double obligation of obedience to the laws of each. After many other plans had been discussed and discarded the Convention sorely perplexed turned

at last to the plan that had been in successful operation in Connecticut since 1699, that of equal representation of the towns in one branch of the legislature and of the people of the towns in the other. This is the origin of the Senate and House of Representatives as established in the Constitution of the United States. This plan with the rule of the majority in all things, which had an earlier origin in the same soil, constitute the central idea and vital principle of the government under which we live.

The influence of New England in securing the adoption of the Constitution, and thus stamping it with living authority as the government of this people, cannot be passed over in this connection. The historians of its adoption accord to New England a predominating influence in overcoming the obstacles which lay in the way of its final approval by the people. The two great states of Virginia and New York were from the beginning opposed to it, and leading men in both, popular orators and idols of the revolutionary period, were straining every nerve to defeat it. The conventions in Massachusetts and New Hampshire, called to consider its adoption, had, on assembling, controlling majorities against it. Madison, laboring with Hamilton to secure its adoption by New York, wrote in distress to co-laborers in Massachusetts that all depended on the action of the latter state, which would be followed, whatever it was, by New York, and New York in turn by Virginia, and that without these states all would be lost. Massachusetts was brought from opposition to ultimate support of it by the confidence that amendments to it, carefully prepared by her leading statesmen, would be adopted and made part of it, and by the speech of plain farmer Jonathan Smith, a delegate from the country town of Lanesborough.


Her decision prevailed with New York by the narrowest margin, and the opposition in New Hampshire was, after a severe struggle, overcome by the same means. Virginia followed in such quick succession that, for a time, there was doubt which of these states was entitled to the honor of completing the number requisite to give the Constitution validity. The one master mind working out these results was that of Samuel Adams, the great popular leader of revolutionary times, himself the very embodiment of New England ideas of government, who, after many days of doubt and hesitation, left the ranks of the opposition in the Massachusetts Convention, and with his followers, changing the supporters of the Constitution into a controlling majority, carried its adoption. New York and Virginia following this lead made certain the number necessary to ordain and establish the government under which this people now live. But for this influence at a critical juncture the attempt at that time "to form a more perfect Union" would have failed. Thus the Constitution of the United States, embodying in the organic law the prevailing political thought and method of New England, was finally by her influence and example ordained to be the government of this people.

CHAPTER VI.

NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION—Continued.

THE ORGANIZATION AND EARLY ADMINISTRATION OF THE GOVERNMENT.

1789-1825.

UCCESS in the establishment and administration of a new government, one which had no model and no beaten path before it, is a test of statesmanship hardly second to that which created it. That portion of the history of our government which falls within the years 1789 to 1825, which, more than any other, may be termed the formative period, comprises the first thirty-six of the one hundred years of its existence. The record of that period in our own history will ever stand among its most striking and endearing pages. During all that period the Chief Magistracy and the larger part of the important administrative offices were in the hands of leaders who were participants in the Revolution and the hardly less important struggle of succeeding years under the Confederation for such an establishment of law and order as would infringe least upon the liberty of the citizen. For thirty-two of those years the President had been a Virginian, and for the other four he had been a New Englander. No such dividing line, however, prevailed in the selection of the other important officials called into the public service during that period. Nor did this preponderance of Virginia in the selection of the Chief Magistrate during that time, by any means indicate a like prevailing influence in shaping the general structure of government then building anew from the foundation, or any dominating control in the administration of public affairs emanating from that state. Beyond the selection of Washington for the first President, who had long before been claimed and appropriated by the whole nation, that of the other three Virginians had in it nothing of significance traceable to any special bias for doctrines or theories prevailing in that state, of which these men were in any sense the exponents. The great work of the builders of the nation was but just begun when the people ordained that the Constitution they had made should be the supreme law of the land. It was the foundation proving in the end to be broader and firmer than even they had hoped, upon which a superstructure was yet to be reared departing not by the breadth of a hair from the fixed boundaries on which it rested, but still ample enough for all possible growth and expansion to meet needs and exigencies ever multiplying in infinite variety of character and importance. The striking characteristic of our organic law is its brevity, laying down only the principles which should govern legislation, and leaving the application to the legislator. These principles were not self-operating, and would not execute or enforce themselves, but required that the necessary machinery for putting them in force should yet be constructed by the law-maker. They were stated with a comprehensive conciseness that has rendered their exact scope and limitations most difficult of determination. This task devolved on Congress, the law-making power, whose work was still subject, at all times, to the supervision of the Supreme Court, which alone in the end is to determine both the application and the limitations of all this constructive legislation. And it is in the construction and setting in motion of this operative machinery, not less than in the formation of the fundamental way along which it was to move, that the creative and practical mind of New England is most clearly visible.

The functions of this Court made it, as its name indicates, supreme in the government, and yet the whole machinery by which this great power was to be exerted was left entirely to the legislature to formulate and set in operation. The Judiciary Act of the first Congress (1789), by which this machinery was created, was, therefore, from the nature of the subject of which it treats, of the highest importance. It has remained till the present day, with little alteration beyond the enlargement and amplification required by the growth of the nation, the guide and arsenal of that Court in the discharge of duties, as well as in the enforcement of powers, second to none in this government. It is not enough to say of it that no other act of Congress, in the hundred years that have passed, has been so widely and so constantly felt in every walk and pursuit of our national life as this. None has led to such lasting and beneficent results. This act was the work of that eminent jurist, Oliver Ellsworth, then a Senator from Connecticut, and afterwards Chief Justice of the Court to whose widespread and abiding influence and power he contributed so much in this act of legislation, constituting a judicial chart for the guidance of the national judiciary from that day to the present time. The names of other distinguished New England statesmen are conspicuous in the history of this period for the prominent part taken by them in the practical application of the principles of the new Constitution to the government of the states and their people. John Langdon, of New Hampshire, was chosen the first President of the Senate of the United States "for the sole purpose of opening and counting the votes for President and Vice-President." Thus he was President of the Senate before Washington was President of the United States. Roger Sherman, of Connecticut, who has the rare distinction of being the only man whose name is affixed to each of the first four great state papers in our history—the Address to the King in which the Continental Congress, before the Revolution, sought to avert it, the Declaration of Independence, the Articles of Confederation, and the Constitution—gave the last of his years to service in both the House and Senate. Of him it has been justly said that "few of his contemporaries left their impress more clearly upon American institutions." Jonathan Trumbull, another Connecticut patriot, after service in the Revolution as Aid to Gen. Washington, and efficient effort in his own state in favor of the adoption of the Constitution, entered the first Congress as one of her representatives, where he exerted a wide influence in the moulding of our infant institutions for nearly eight years, both as Representative and Senator. The great opportunities which the Speakership of the House during the Second Congress afforded him to influence and direct legislation, were always used for the wisest ends in the establishment of the government upon the broadest and most stable foundations.

But the true test of the influence of New England in the legislation of this period is not to be found so much in the array of the names of distinguished statesmen, called by her into the public service at that time, however tempting the list, as in tracing to their origin the leading principles and prevailing policies upon which the government was administered during this early and formative period.

The general terms of the Constitution had left much of difficult construction and shadowy definition for determining the exact boundary lines within which were to act the great departments, into which the government was divided. The direction or trend in administration, which the solution of these problems at the outset might create, was sure to be felt in the years to come, if not to involve permanent and irradicable consequences. Thus, while the treaty-making power, the "supreme law of the land," was reposed in the President and Senate alone, the House of Representatives

was made especial guardian of the treasury, and not a dollar of the public money could be appropriated to any use without its concurrence. It happened early in our history that the President and Senate, in a treaty made with Great Britain, bound the nation to pay certain sums of money to carry out its provisions, and then called upon the House, which had had no part in this agreement, to appropriate the money required by its stipulations. The House, not liking the terms of the treaty, claimed the right to determine for itself, upon what it might consider to be the merits of the treaty, whether the appropriation should be granted to carry it out, or refused, and thus destroy it. To refuse it was to destroy the treaty-making power of the President and Senate, while to be bound by that treaty-making power to appropriate the money against its own judgment was to take from the House its power over the treasury. Upon this issue, thus sharply drawn at the beginning, between different branches of the government upon the construction of the limitations of their respective powers, there sprang up a very bitter contest, and possibility of harmony seemed for a while impossible. That it was finally restored, upon a construction which preserved unimpaired both the treaty-making power of the President and Senate and that of the House over appropriations of money, was due almost entirely to a masterly and unanswerable argument made by Fisher Ames, a New England member of the House. In this he had the able and effective support of Theodore Sedgwick, another New England member, afterward Speaker of the House. The construction of the powers and limitations to which they led the House has been adhered to ever since, as the guide of those who have followed in the administration of public affairs.

The power of the President to remove from office, at his pleasure, officers except judges appointed on his nomination to the Senate and confirmed by that body, was determined by the casting vote of John Adams, a New Englander, the first Vice-President and second President of the United States. The construction thus placed upon the President's power of removal from office, though often questioned, has been followed ever since, with the exception of a brief period during a part of President Johnson's administration.

It was determined in the first Congress that the government would rely for revenue mainly upon receipts from custom duties; and in the first tariff act, which was the second act signed by President Washington, the method of imposing duties that discriminate between raw materials and the manufactured articles, in favor of the former and against the latter, was adopted, and has been followed with more or less strictness in all subsequent tariff legislation. The discussion first arose over a New England industry, and in it New England members took a leading part, exerting a determining influence in a decision which has had a marked and abiding effect upon the industrial pursuits that have since formed so large a share of our national wealth and prosperity.

In the measures which resulted in the assumption by the Union of the debts incurred by the several states in the War for Independence, and the establishment of a National Bank, of which Alexander Hamilton was the author, New England gave him, in all their stages, a support without which they would have gone down before Southern opposition. And that opposition was only overcome at last by consenting to a seat of government on the banks of the Potomac. These measures proved of vital importance in giving life, vigor and stability to the infant republic struggling in its feebleness under burdens which would have staggered much older and stronger governments. The far-reaching effect of this wise and patriotic legislation can hardly be measured, and all who shared in it deserved well of the generations coming after them. Our nationality has been for a century reaping its benefits in a cemented

Union, and a financial system which has survived the assaults of the wildest vagaries and the most insidious and dangerous of commercial heresies. This financial system owes its very existence to the support which New England gave to its great promoter in every stage of its progress through Congress.

In the legislation, during this period in our national history of which we are now treating, and which led to and became necessary in carrying on the war of 1812, New England took no part, and shares no responsibility. It was in opposition from beginning to end, and, stimulated by the hostile attitude of that legislation towards its every interest, and all its convictions, it carried that opposition so far that the historian will find more to criticise in the excesses of passionate language to which it led than in the want of cause for the opposition itself. But to the measures, at the close of that war, rendered necessary by the depressed and distracted financial and industrial condition in which it left the country, New England contributed a substantially united and effective support, as soon as she was able to recover from the prostration of all her invested energies which that war had brought upon her. During Mr. Monroe's administration, a New Englander, John Quincy Adams, one of the great statesmen in our history, and afterwards President of the United States, was at the head of his Cabinet, and director of the foreign policy of the government. His diplomacy added Florida and the other states of the Gulf to our territory, and he was the father of the "Monroe Doctrine," which was formulated by his pen, and has become the settled policy of the government during all the changes and vicissitudes of subsequent administrations. It was at this period that Daniel Webster began, as a Representative from New Hampshire, his great career of forty years of public service, and John Holmes, first as a Representative from Massachusetts, while Maine was still a part of that state, and afterwards as a Senator from Maine, and Jeremiah Mason, as a Senator from New Hampshire, began theirs. These distinguished statesmen took that share in shaping and promoting public measures which their great ability commanded. To their influence can be traced much in the public policy of that period, which contributed so largely to the restoration of prosperity, and to the "era of good feeling" which succeeded the general disaster and bitter strifes engendered during the war.

CHAPTER VII.

NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION—Continued.

FROM THE CLOSE OF THE "ERA OF GOOD FEELING" TO THE COMMENCEMENT OF THE CIVIL WAR. 1825-1861.



NEW ENGLANDER, John Quincy Adams, became President in 1825. A political storm had succeeded a calm in politics not known before or since in our history, and natural currents of influence and policy were lost under the presence of blind and infuriated partisan zeal, dominated in the early years of the period more by the personal following of different factions than by political convictions. These personal followings were, in time, merged in political divisions, which have remained, with slight modifications in names and creeds, till the present day, permeating and giving

color and character to all legislation, so that party politics often overrode patriotic convictions, and the healthy demands of broad and unbiased statesmanship.

During almost all the period of which we are now speaking, which closed with the breaking out of the Civil War in 1861, New England found itself in the minority of these political divisions, and powerless to determine the general character and drift, as well as purpose of legislation. It could not, therefore, originate or determine the objects of legislation or the policy of administration. It could only be *felt*, and its influence could only be measured by its ability to force its convictions upon those having the power to adopt them and thus to impart their color to the methods and purposes they controlled. This is quite as severe a test of potency for good or ill in this government of ours, resting as it does, upon what the whole people determine it shall be. To thwart evil is often quite as efficacious as the achievement of positive good, if it be not in fact the same thing.

By this test we must measure the influence of New England on national legislation in its conflicts with hostile majorities during this time. It need not shrink from this task in the hands of the unbiased and faithful chronicler of the important events which characterize this, of all others, the pivotal period, outside the Civil War, in all our history thus far. In it, more than in any other, there sprang into life and formidable force dangerous heresies as to the nature and powers of the government, which were espoused by some of the ablest men of the country, and, for a time, were pushed to a prominence overshadowing all other consideration of public affairs. The doctrine of state sovereignty—the supremacy of the state governments over the national government, and the consequent power of a state to nullify the laws of the nation and to secede from the Union—first found open and avowed advocates at this time among leading statesmen whose ability and personal worth imparted to their sentiments a most dangerous influence. In addition to the fatal consequences sure to follow upon the prevalence of these heresies, another peril, which has been the bane of peace to the republic from that day, arose at the same time and under the same influences which gave these doctrines their dangerous character. The advocates of these doctrines were all from the southern section of the country, south of “Mason and Dixon’s line,” while nearly all who met them in debate were north of it. Consequently in these debates over them the disciples of each were divided substantially by the same line. These heresies have been from that day the cover under which, as from a casemate, undertakings and projects hostile to the Union, like the extension of slavery, have been forced upon the politics and policies of the government.

We are now led to the inquiry, what has been the influence of New England upon the legislation and consequent policy of the government under these conditions and during this critical period in our history? The answer is plain. In the Halls of Congress and in the forum of debate the doctrine of State supremacy over National authority, and all the brood of fatal heresies of which it is the mother, were met and so completely vanquished that they have never recovered, and stand to-day before the world as without foundation in the nature, or purpose, or structure of our government. This complete discomfiture in debate was a New England triumph. To Mr. Webster more than to any one else is the country indebted for dislodging these heresies from the hold they were gaining in the public mind and judgment, and demonstrating beyond any future answer that they had no foundation either in the history of the formation of the government, or in the construction, limitation, or scope of its powers, as they were intended to be and were actually ordained. It was this New England statesman who, almost alone and single-handed, encountered, in this test of reasoning powers and in an intellectual tournament never equalled for brilliancy

and skill, all the illustrious champions of these fatal elements of disintegration and dissolution sought to be fastened upon the life of our nationality. Mr. Calhoun, till then unmatched in any measure of intellectual power, Mr. Hayne, whose blade was never before broken, Mr. McDuffie never before answered, and other lesser champions, all retired from this field never to return, and no fresh recruit has been found to enter it since. Years afterwards bolder but not abler champions of the same cause staked it on the issues of the battle-field with results not less disastrous or decisive. All, even the vanquished, conceded to this representative of New England a complete triumph in a contest which to not a few seemed, in the outset, desperate.

The effect of the discussions, arising out of this attempt to stamp upon the government these fatal theories, and in which New England bore so conspicuous a part, was widespread and abiding. In no other period of our national history, and in no other field of effort has its influence been so deeply felt, or so far-reaching in its effect, as in this struggle with these heresies of which in after years the Civil War was born. Indeed it has been said that the weapons of the soldiers battling for an indestructible Union were shotted with the arguments by which Mr. Webster scattered the syllogisms and sophisms of the specious logic of Mr. Calhoun and his compeers. Certain it is that the war for the Union was maintained and justified only on the theory of our government so clearly and unanswerably demonstrated by Mr. Webster.

This attempt to recast the powers of the government for the purpose of turning it to uses and ends not contemplated by those who framed it, overshadowed in importance many other measures of legislation and administration which would otherwise have rendered this period conspicuous in the annals of the nation. The controversy with the National Bank, and the legislation consequent upon its downfall, wrought an important and lasting change in the fiscal methods of the government. The policy of internal improvements into which Congress had embarked under previous administrations now encountered a check which in the end compelled its abandonment. The public land policy was liberalized and so systematized as to contribute largely to that development and growth of the West which has since surpassed the anticipation of the most sanguine. Tariff legislation under the lead of Mr. Clay, the father of the "American system," swung in this period from an abandonment of that system in 1832 to a return to the highest type of it in 1842, and in 1846 returned again to the principles of the Compromise Act of 1832. In all this legislation, though powerless to control it, New England, represented by men of the highest rank for ability and statesmanship—by such men as Peleg Sprague, John Holmes, George Evans, Hannibal Hamlin and William P. Fessenden of Maine; Samuel A. Foote, Isaac Toucey, Freeman Smith, R. A. Baldwin, and R. J. Ingersoll of Connecticut; J. Q. Adams, Edward Everett, John Davis, Richard Fletcher, Levi Lincoln and Robert C. Winthrop of Massachusetts; Tristram Burgess and James F. Simmons of Rhode Island; Samuel Prentiss, Franklin Pierce and Levi Woodbury of New Hampshire, and S. S. Phelps, Jacob Collamer, and Solomon Foote of Vermont, exerted a large and marked influence in coloring, shaping, and qualifying measures it was unable to determine either in their origin or their ultimate purpose. It may be confidently stated, in view of the discussions to which these various subjects of legislation gave rise while pending in Congress, and the part in these discussions borne by these representatives of New England, that its influence was especially recognized and conceded in the ultimate shaping and determining of these measures. They thus gave direction to a current which as a minority they had no power to stay.

But a larger and more serious policy of the government, giving character to the

legislation of nearly half a century which followed, was contemporaneous with, if it did not itself originate the great debates of this period over the nature and powers of the national government, already considered.

The government committed itself to the policy of the extension of Slavery into new territory early in this period, and so closely in connection with this constitutional discussion as to create the belief that it was the cause of that discussion. A struggle arose over the attempt to force that policy upon the country, which continued for a generation, and culminated in the Civil War. We do not discuss here the merits of the subjects of legislation in which New England took part, only the share she bore in promoting or resisting that legislation. And the record of the times bears abundant testimony to the ever-present and potent voice of New England in all the debates and deliberations in which this struggle, fraught with consequences the generations cannot limit, was involved. So transcendent in importance was it while pending and undetermined that all other matters dwarfed in its presence. At no other period in our history, since the fathers inaugurated the government, had greater statesmen been called into the public service, and the standard of New England statesmanship had not, in the meantime, been lowered. It was never higher, and never measured a greater or more patriotic service than that rendered by her representatives in this crisis in their country's life. Daniel Webster was there with his commanding power till his death, in the midst of the conflict; Charles Sumner, with his erudition and scholarship and eloquence, dying just when the struggle was closing; William P. Fessenden, fearless and courageous and lofty in his bearing as a knight in battle; John P. Hale, with his weapon always in the flesh of his opponent. In the House was that old man eloquent, John Quincy Adams, always foremost, and whose presence was a power. By his side was the young and dashing Anson Burlingame, trumpet-tongued; John Davis, solid, sound and strong; Hannibal Hamlin, discreet, wise and safe. With them stood others of the New England delegation in the Senate and House, in this conflict, worthy of mention here, who closed up the ranks in a united force whose voice had no discordant note, and whose common resolve was the vindication and maintenance of free institutions in this land at whatever cost.

But we have not space for detail of the measures put forward in pursuance of this policy of pushing the institution of slavery into all new and unoccupied territory within possible acquisition. Nor is this necessary to make clear the almost dominating influence of New England in the legislation which, in the end, brought this policy to naught, after it had attained such a hold upon all departments of the government that dislodgment seemed well nigh impossible.

In pursuit of this purpose, to which all else was made subordinate, Texas was annexed, war with Mexico was provoked, and by that war vast possessions on the Pacific Coast were added to our domain, the Missouri Compromise was repealed, the Fugitive Slave Law enacted and the Dred Scott decision pronounced. The Lecompton Constitution was forged for the free territory of Kansas, and all our territorial possessions were opened to the slave-owner with his human chattels. Numerical majorities in Congress were committed to this work, and the political conscience lay dormant. In opposition to this policy, and all the legislative measures in Congress for its advancement, New England presented a united front, and in no part of our national history has its influence been more potent, or been crowned with more signal success. Crowded as the pages of our history are with the marvelous results of agencies man has foolishly and vainly selected for his own ends, the student of our growth and development will find among them all none so remarkable as these

which record the amazing contrast between the end sought and that attained through the policy and measures of which we are speaking. Texas was annexed at the cost of war with Mexico, but all the vast acquisitions of that war went to multiply free instead of slave states. The Missouri Compromise, which prohibited slavery north of Mason and Dixon's line, was, indeed, repealed, but the institution was never planted north of it. The Dred Scott decision put the shield of the Constitution over the work of the slaveholder while he was attempting to make slave states in Kansas and Nebraska, but, instead, two great free states were, by New England influence and convictions, planted and maintained there by the courage and strong arm of her own sons, thereby added to the Union, turning the balance between free and slave states forever against the originators of these measures. Nor did the Fugitive Slave Law bring any additional security to slave property, but, on the contrary, its harsh provisions made its enforcement next to impossible, and stimulated greatly the establishment of "underground railroads" to Canada. Never has it been so strikingly demonstrated that "while man proposes God disposes."

It remains to be shown what part New England had in those influences which turned all these legislative measures out of the channels their authors had constructed for them into others so divergent and so fatal to their plans. A study of the course of events and of those who participated in giving them direction during this important period will make plain the large, if not controlling, share of that work which fell to men representing New England in Congress. They were, as a body, men of marked ability and large experience in public affairs. Some of them were of the foremost men in our history, and have contributed more than any others to the making of the history of their time the most remarkable in all our annals. John Quincy Adams, after having filled the Presidency and every other office at home and abroad in the gift of the Republic with distinguished ability, entered the House of Representatives at the age of sixty-three as a Representative from Massachusetts, and served for eighteen consecutive years, while these events were happening, with a sagacity and wisdom and power which were the marvel of contemporaries and which have left an ineffaceable impress upon the character of the important legislative measures of that period. His encounters with the dominant powers in their attempts to make slavery national, were, like those of Paul with the beasts at Ephesus, great battles in which, in the presence of the nation, he triumphantly maintained, almost single-handed, right and justice against overwhelming odds. In this contest the "Atherton Gag" fell, and the sacred right of the citizen to address by petition his legislators was vindicated. The spectacle of the long fight of this "old man eloquent" with the cohorts banded in the interest of slavery opened the eyes and quickened the conscience of the nation, making every step taken more difficult and hopeless. A brave and just people rallied when they saw him, like a faithful guard at the entrance of a citadel, with his back to the wall disputing every step of the advance, and the assault, after many breaches had been made, failed in the end. He fell on the field of battle, and before the victory had been determined, "crowned with every honor his country could bestow, and blessed with the hope which inspires those who defend the right, and uphold, when menaced, momentous interests of mankind."

Mr. Sumner, who entered the Senate a few years later, devoted his great powers to the carrying forward of the work so ably prosecuted by Mr. Adams during his lifetime. There was no gap in the leadership of New England, nor falling off in its influence in giving shape and direction to the forces which were mustering to the defense of free institutions. Every day of Sumner's public service down to the time

when the issues that had been raised passed from the forum of debate to the arbitrament of war, was a strengthening stimulus to the patriotic conscience of the country, and an increasing force in the effective resistance to the policy of slavery extension to which those administering public affairs were committed. The brutal attempt to silence him with a bludgeon while at his seat in the Senate Chamber was a confession that his influence and power could only be broken by disabling and removing him from the public service. It increased both many fold.

Details of the measures and counter-movements which availed so much in turning to naught the schemes for aggrandizement of the slave power cannot be brought within the limits which govern us, and results are all that is needed for our purpose. But great as were the services in this regard of these two illustrious statesmen, services now put at their true estimate by the consensus of public judgment everywhere, still mention of others must not be omitted in any attempt to fairly present the influence of New England in the national government at this crucial period in our history. Others, of deserved national reputation, rendered in these times conspicuous service, not only in this effort to stay the government in the work to which its energies were being so largely directed, overshadowing in importance all else in the administration of public affairs, but also wherever the influence of New England was so effective and abiding in national legislation. By their side stood also the unflinching Truman Smith, of Connecticut, the practical Israel Washburn, Jr., of Maine, the wise Charles Allen and sagacious Robert Rantoul, Jr., of Massachusetts, the safe Amos Tuck, of New Hampshire, all aglow with the fire first kindled on these shores by the Pilgrim and Puritan Fathers, and their influence on the legislation of that period is ineffaceable.

We have considered with special emphasis the part borne by New England in the two great and absorbing questions of nullification and slavery extension which agitated the country during this period. But other grave questions arose, were debated in the councils of the nation, and were settled for the time being, affecting seriously the administration of public affairs. The overthrow of the National Bank and the substitution of the Sub-Treasury in our fiscal system, the extremes of tariff legislation and the Public Land policy of the nation, have been already briefly alluded to. To the direct influence of New England and the skill and ability of her great statesman, Daniel Webster, is due in this period the Ashburton Treaty, settling advantageously our northeastern boundary line, long in dispute between this nation and Great Britain. And it was under the same influence that we were prevented from agreeing to the mouth of the Columbia River for our extreme northwestern boundary. And it was in disregard of that same New England influence and statesmanship that those in control of public affairs unfortunately gave up to Great Britain all our claim to territory north of forty-nine degrees of latitude, a surrender now seen to be an irreparable loss to the nation.

In the legislation which attempted to compose the national troubles caused by the acquisition of territory for the purpose of the territorial extension of slavery, and which undertook to atone for sin by compounding with it, the ultimate purpose utterly failed because of a public sentiment originating in New England convictions which, spreading from its soil, thwarted and turned, to the confusion of their promoters, plans so at war with the conception there held of the nature of our government and the equality of rights it was founded to secure and maintain. The legislation of the closing years of this period, immediately preceding the Civil War, was largely devoted to this vain effort, causing one constant and bitter struggle between the opposing forces called into conflict by the policy here spoken of.

No one can measure the ultimate effect upon our institutions of success rather than the failure which attended one after another of these legislative efforts to save from utter defeat the cause in whose behalf the conflict had been provoked. Nor can one overestimate the importance of those influences which at last forced the abandonment of the pernicious policy to which the government had so long and pertinaciously adhered. In all these conflicts the influences which had New England for a centre, were growing stronger and stronger. The aggressive character of the attempt to make territorial acquisition and slavery extension a common purpose gradually weakened as the handwriting on the wall became more clear, till at last alarm lest what had been attained might be lost by further persistence, took the place of that bold and brazen front which had characterized the earlier contests. That long-continued supremacy which it had maintained in the legislation of the country began to give way at last, as the opposing force increased in numbers and in confidence. The final struggle for the continuance of that supremacy before the issue was put to the arbitrament of war, was in the organization of the Thirty-fourth Congress, in December, 1855. That conflict between the power which had dominated national legislation for nearly half a century and that force of public opinion which had put other construction upon the scope and purposes of our institutions was most memorable and decisive. It was protracted to great length and conducted with much bitterness and violence. It was looked upon as the last trial of strength between these opposing forces. Many earnest and patriotic citizens were convinced, as it progressed, that the foreshadowed defeat of the old-time policy would not be accepted as final, but that war alone would settle it. Hence, an anxiety, intense as never before, fixed the public attention upon all that happened in this two months' struggle over the organization of the House of Representatives. A New England man was, by common consent, selected as leader, because, better than any other, he represented the real purpose of the combined forces in opposition to a national policy so at war with New England instincts, education and convictions. The election of Gen. Banks as Speaker, and the consequent control of legislative proceedings in the House of Representatives, was the most signal triumph yet achieved of the principles on which the government was founded, as understood and inculcated in New England from the outset. And had it not been for the sleepless vigilance and guiding hand of its representatives, failure instead of success would have been the result. It was in all its elements a New England triumph. That the fruit of this victory was so wisely utilized in anticipation of impending conflict of arms which even then began to darken the horizon, is not a little due to the same influence. New England was exceedingly fortunate in its representation in Congress at this time. Men of great ability and foresight, as well as of courage of their convictions, had been sent from each of these six states to both Houses, and, when there, maintained, against all comers, and in spite of faint-hearted friends, the cardinal doctrines of the government on which New England had been founded and which had been by its representatives in the early days built into the framework of the Constitution. Some of these men have already been named, having commenced their service at an earlier date. They were no less active in this final trial of strength. Others began at this time a public service, destined in later and more critical periods to be of incalculable value to the Union. Of these, that of Henry Wilson, a native of New Hampshire, who entered the Senate in the last month of the preceding Congress, as a Massachusetts Senator, was among the longest in duration, and in some respects the most remarkable. He was a typical illustration of the extreme possibilities of Ameri-

can life under American institutions. The child of poverty and toil who held him in their lap till the last hour of his life, he fitted himself for the exigencies of this period in that school in which toilers for daily bread learn of the hardships imposed by the taskmaster, and of the grievous burdens borne by those they assume to govern. The lessons of his early years were never forgotten when in after life he was called to confront the demands of the slave-master. It was a fit opportunity and a work to which every fibre of his manhood responded with alacrity. But his most important service was rendered at a later period. Maine had in the Senate at that time William Pitt Fessenden and Hannibal Hamlin, and Vermont, Solomon Foote and Samuel S. Phelps, among the ablest and most influential senators of their time, and Israel Washburn, Jr., and William Appleton, Thomas D. Elliot, Tappan Wentworth, Samuel H. Walley and Origen S. Seymour were among the representatives of New England states, faithful to their trust, and strong enough to impress their convictions upon their associates. Behind this strong array representing and defending their principles in the national legislature stood a constituency for whom spoke men of a weight of character and power of pulpit and forensic eloquence which had had no parallel since the days of the Revolution. They deemed it a second revolution necessary for the preservation of the fruits of the first.

The struggle was carried into the next Congress. But the attempt of the propagandists to regain the power lost in this memorable struggle was unsuccessful, and every day revealed more closely the unwelcome truth that the sceptre was slipping from the grasp of those who so long wielded it for the spread of a system of human bondage. There was never after to be a new slave state in this Union. When this became apparent, efforts in this direction gradually ceased, and a more insane folly took their place. A Union which could not be controlled for these ends must yield to them, and what had been lost in the Congress of the Union must be regained by force, and at any cost. And preparation for such a new attempt followed fast upon the conviction that opposition in Congress had at last become too strong for success. But this could not be done in secret. "Surely in vain is the net spread in the sight of any bird." The very first note of preparation for the attainment by force of what had been lost in the halls of Congress fell on a public ear already aroused, and brought at once into active defence of national unity all the patriotic energies of the nation. And these had found from the beginning no so congenial a soil as that first taken possession of by the Pilgrim and Puritan for the very purpose of maintaining religious and personal freedom. Accordingly to that portion of this work which came within the province of Congress, the representatives of those stern and uncompromising principles that dictated the compact in the cabin of the "Mayflower," and afterwards made "the cause of Boston the cause of the whole country," addressed themselves with an effective energy and a commanding influence which never weakened nor faltered while this mad internecine conflict lasted. To the part borne by New England in the legislation of that period, hardly less important and decisive of lasting results than the achievement of arms, we are now brought in the historical treatment of this subject.

CHAPTER VIII.

NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION—Continued.

DURING THE CIVIL WAR. 1861-1865.

DURING all of this preparatory period the executive and administrative functions of the government were in hands, if not actively hostile, yet really indifferent, to any effort to suppress measures and movements undertaken avowedly as a menace to the unity of the Republic. The little that was accomplished before the actual outbreak was the result of home influences, for the people awoke to impending peril before those entrusted with power were stirred to action. And when the work of preparation was entered upon in earnest, its importance and the difficulties surrounding it became apparent to all. There was no precedent for the legislation demanded by the exigencies of the situation, and there was no one in the public service to whose experience it could be trusted. And yet New England had so commanded the public confidence that when Congress met to commence this, the most important of all the work which has ever devolved upon it, of the Standing Committees to whom this great duty was entrusted, ten out of twenty-one—among them those of Foreign Relations, on Finance, on Military Affairs, and on Naval Affairs, the most important in this crisis of all—were put in charge of New England Senators. Of the Committees of the House, four were presided over by representatives from the same six states. In the next Congress, which opened midway of the war, and in its darkest period, eleven of these Committees of the Senate, and eight of them in the House, had New England members for Chairmen. Therefore, all that pertained to our relations with foreign nations, never so important or delicate; all the burden of taxation, never so great, as well as new and untried conditions in which the currency was involved; and all legislation affecting the Army and Navy, on whose efficiency the issues of the war depended, passed under the moulding hand, and took on the character given them by those representing the traditions and convictions which prevailed in New England, thus represented by the distinguished men who presided over and gave direction to the course of these committees.

Of the measures which emanated from these committees it is necessary to mention a few only. The most important of all these is that which met the exigencies of the treasury upon which the necessary expenditures of the war made enormous drafts, in magnitude never heard of before—exceeding \$3,000,000 a day for long periods in the stress of the war. This measure justly bears the name of a New England representative, because to the indefatigable labor, most judiciously and wisely directed, of Justin S. Morrill, of Vermont, more than to all others put together, is the country indebted for that law.

It created a system of taxation, in many respects new and untried, to the demands of which the utmost resources of a patriotic nation yielded up a willing tribute sufficient to sustain the credit without crippling the industrial life of the country. The national currency, called “greenbacks,” and the national banking system, to this day indispensable in the transaction of the business of the country, although originating with others, still owe their permanent place in the financial system of the country to the constructive hand and effective influence of these com-

mittees, without which they would have failed. All the measures for raising and equipping of armies and for their support in the field, as well as those for creating a navy to defend our commerce on the high seas and maintain the blockade of southern ports, are due to the labors and influences of which the committees here spoken of were the organs. In the midst of these great tests of the vitality and power of the government, New England enterprise and capital inspired the Congress of the nation with the courage to enter upon the construction of a railroad to the Pacific—an undertaking exceeding in magnitude any other hitherto attempted on the continent and which saved to the Union the Pacific states. The act which abolished slavery in the District of Columbia, that prelude to general emancipation, was drawn by one New England member, and introduced by another. The legislation necessary for the most vigorous prosecution of the war, altogether too multifarious for particular mention here, found at all times most earnest and effective support from all who represented New England. It stood at all times and in all measures with the staunchest defenders of the Union, and for the broadest interpretation of its powers of self-preservation. The liberation of the slave as a war measure was first publicly proposed by Senator Sumner, and took such hold of public opinion, first in New England and afterwards throughout the country, as to hasten and sustain President Lincoln in the issue of the proclamation of general emancipation which followed it. Not the least potent was the influence of the representatives of New England in the halls of Congress in pressing upon their associates their conviction of the ultimate purposes to which the exigencies of the war, during its progress, were driving its prosecution, and in justifying the end towards which the blind fury of the enemies of the Republic were forcing it. The courage of Congress found a stimulant in the darkest hour in the united voice of New England urging forward measures best calculated to promote that end. At no time was its influence so actively and effectively exerted as when the national council awoke to the conviction that the extinction of slavery, the cause of the war, alone would terminate it. And all subsequent measures promotive of that end found their origin or most efficient support in the same quarter. Senator Wilson of Massachusetts introduced a bill which became a law, to more effectively suppress the engagement of our own ships in the slave trade, a business in which large shipping interests in our own ports had been for a long time engaged with impunity. But the crowning act of Congress during the war was the proposition to abolish slavery everywhere throughout the land by an amendment of the Constitution adopted by the 38th Congress, February 1, 1865, and proclaimed as a part of the Constitution on the 18th of the following December. The authorship of this amendment, so fundamental in character and so grand in effect, has been claimed in behalf of a number of public men who were conspicuous in promoting its adoption, and each of whom had at different times formulated the project in words sufficiently effective, perhaps, but differing from those finally adopted and made part of the Constitution. The fact has no great intrinsic merit beyond its bearing upon the subject here discussed, inasmuch as the need of it and the possibility of engrafting it upon the Constitution had long been in the minds of many earnestly patriotic men. The proclamation of emancipation was generally accepted, at first, as the death-blow of slavery, and it is not easy to conceive, even at this late day, how it could have survived or even recovered from the blow. But it was not long before doubts of its permanent effect, when peace should be restored, began to rise in the minds of those even who did not doubt its validity as a war measure. Besides, it was not of universal application, and the border states and sections of others in which the rebellion had ceased before January, 1863, were by its express terms exempt from its

operation. And no one could give any assurance that the whole force and effect of it might not be swept away by a decision of a Supreme Court which had rendered the Dred Scott decision. These painful doubts were turning the public mind gradually towards an amendment of the Constitution as the only possible death-blow. Mr. Lincoln himself entertained these doubts, and was oppressed with these misgivings of the future, though he at no time by any public utterance added to either in the minds of others. The first public movement for such an amendment of the Constitution was a resolution to petition Congress for its adoption, passed by a public meeting of anti-slavery men in Philadelphia, December 4, 1863. This resolution was drawn by Mr. Sumner, a New England Senator, and offered at this public meeting by Henry C. Wright, another citizen of New England. John M. Ashley of Ohio, in the House of Representatives on the 14th of the same month, and J. B. Henderson of Missouri, in the Senate on the 11th of January following, and Mr. Sumner himself, as well as others, introduced propositions to the same effect, though neither of them was in the form finally adopted and now a part of the Constitution. This amendment was supported by loyal men of all parties in all the states fighting for the preservation of the Union, but finally adopted only after one of the severest parliamentary struggles known in our history, in which Mr. Ashley, who first introduced the proposition in Congress, and Mr. Sumner, who first publicly proposed it, as well as the entire New England delegation, bore a conspicuous and effective part. It is not too much to say that the support it received in debate and personal influence from Hale and Clark of New Hampshire, Fessenden of Maine, Wilson of Massachusetts, and Anthony of Rhode Island, in the Senate, with Boutwell, Eliot and Rice of Massachusetts, Blaine and Pike of Maine, Deming and Brandegee of Connecticut, and Jenks of Rhode Island in the House, as well as others from New England, was essential to its passage. So marked and effective was the influence of New England in securing the adoption of this amendment, that it was followed by a proposed amendment offered by Mr. Davis of Kentucky, one most strenuous in his opposition, that the Constitution be further amended by reducing the six New England states from six to two, and its Senators from twelve to four—a tribute to its influence in the halls of Congress at this time more significant than any that can be offered here.

CHAPTER IX.

NEW ENGLAND INFLUENCE IN NATIONAL LEGISLATION—Continued.

SINCE THE WAR. 1865-1897.



THE historian of the Republic would be called upon to divide into many chapters the thirty years which have elapsed since the close of the war. But one who undertakes to write of the influence of New England in the administration of public affairs, under the new dispensation born of the war, will not find it easy to make these divisions, when treating of a force so constantly present and so continuous and effective in its activity that search for any break in it would be vain. The end of the

war lightened burdens and lessened anxiety, but complications and perplexities multiplied at every step in dealing with the new conditions which it had created. It had not only revolutionized the social life of nearly half the states in the Union, but it had left the very political existence and status in the Union of those states, in debate and serious doubt. It had also made freedmen of four millions of slaves, without defining their place or rights among their fellow-men, and without even pointing out where or how they were to live. In addition to all this it had bequeathed to this generation, with the blessings of peace, the burdens and woes of the war unexampled in magnitude, for which provision must be made. No generation of men, administering public affairs in time of peace, was ever confronted with graver questions demanding immediate solution. The magnitude and character of the difficulties which beset the path of the statesman while threading his way amid these embarrassments and entanglements, as well as his missteps, now apparent, are outside of the lines within which we write. Our inquiry is as to how much of the work undertaken and accomplished in dealing with these conditions was borne by New England, or effected by her aid and influence.

It will be sufficient to call attention to the origin of a few of the leading measures of the early days of this period, rendered necessary to meet the exigencies of the new conditions in public affairs. The Freedman's Bureau was designed to provide temporary care for the destitute and homeless freedmen, who had by emancipation been thrown upon the world without preparation or means of support. It was the outgrowth of many measures proposed in both House and Senate to make adequate and suitable provision for this altogether new and pressing demand. Mr. Eliot, a New England member, was the author of the first bill, introduced by him and passed by the House. Mr. Sumner proposed another, which was adopted by the Senate; and out of these a bill was framed by a Conference Committee, in which New England was represented by Senator Wilson and Mr. Boutwell, and enacted into law. Its administration was put in charge of Gen. O. O. Howard, a thorough New Englander in every impulse of his being.

The 14th and 15th amendments of the Constitution, making the freedman a citizen and a voter, were found necessary to buttress the 13th, and to secure its logical results to those it had made free. The first of these amendments, although undergoing many changes in progress to adoption, was essentially a proposition introduced by Mr. Blaine, of Maine, and the second was offered by Mr. Boutwell, of Massachusetts. In support of both these amendments the New England delegation in both House and Senate took a leading and effective part, Mr. Sumner, Mr. Fessenden and Mr. Wilson in the Senate, and Mr. Boutwell and Mr. Jenckes in the House, taking the lead in their advocacy.

The reconstruction and rehabilitation of the insurrectionary states, in addition to the difficulties inherent in the questions themselves, encountered others which aroused bitter contention and strife well nigh insurmountable. These grew out of the estrangement and hostile attitude which sprang up between President Johnson and Congress, and out of divisions in Congress itself over the legal and constitutional status of those states in the Union. The President asserted exclusive executive jurisdiction over the question, and Congress, with equal persistency, claimed that the law-making power could alone dispose of it; while in Congress there were leading men who maintained that the insurrectionary states had ceased to exist as states and must be governed as territories. In this condition of the serious questions involved, the whole subject was put in charge of a joint committee selected from among the ablest members of the two Houses, with Mr. Fessenden, of Maine, as Chairman on the part

of the Senate and Mr. Stevens, a native of Vermont, as Chairman on the part of the House. Among its members were also Mr. Morrill, of Vermont, and Mr. Boutwell, of Massachusetts. The reconstruction acts, which were the work of that committee, cannot be discussed here. Under the conditions prescribed in them all the insurrectionary states were finally restored to their proper relations to the Union. This result is due to the labors and influence of the members of that committee, already named, all genuine New Englanders, more than to all other members. There were also on that committee three other able coadjutors, who were likewise New Englanders by birth, education and early training, making seven in all. At many other points, where re-adjustment became necessary in the new order of things consequent upon the war, the fashioning hand was the same that had proved so efficient thus far.

Whatever of equality in civil rights was secured to the colored man by legislative enactment in this government of equality in citizenship came from the same source, and the statute enacted for that purpose justly bears the name of Senator Sumner, its prime mover and tireless advocate. Even in that lamentable warfare which raged in the midst of national perils, ending in the impeachment of the President, now generally condemned, members of the House from New England took a leading part in the prosecution, and the history of that memorable trial has made especially prominent the course of more than one of the Senators from the same section as judges. That of Senator Fessenden, of Maine, secured an acquittal.

If we turn from the consideration of the influence of New England in the legislation touching the changes in the government itself consequent upon the war, to that exerted by it in the financial legislation, we shall find not less conspicuous and important its share in the enactments which saved the treasury from collapse, the currency from uncontrollable inflation, and the credit of the nation from inextricable ruin. During all this time, covering the most important financial legislation in the history of the country since the foundation of the government, such was the estimate of the capacity and influence of the New England representation in Congress that its most important business was intrusted to standing committees of which the chairmen were from that section. The Chairmanship of the Finance Committee of one House or the other, and some portion of the time, of both Houses, was from New England. In the 37th and 38th Congresses, 1861-1865, the period of the war, ten of the twelve Senators from that section in the first, and nine in the second, out of the twelve, had charge, as chairmen, of the most important business which came before those bodies for action. And in the House the share of New England in the direction of business through committees was equally significant. This distinction has hardly had interruption till the present time. In this way may be traced the influence of legislators from this section in the final shape of much of the important legislation of the later as well as the earlier period of our history. In this connection the agency of these legislators in many matters will not escape attention. There has been no tariff legislation since the breaking out of the rebellion in which New England has not taken a prominent part. The Morrill tariff legislation during the war, as has already been said, was almost entirely the work of one of the legislators from New England. The revisions of that legislation during the 42d and 43d Congresses, 1871-1875, were in like manner the work of another member from the same section of the country. So also the reciprocity provision and other features of still later revision can be traced to the same influence. The present policy of transforming the Indian tribes into self-supporting citizens of the United States, by means of allotment of homesteads and education from the public Treasury, had its author-

ship and constant support among New England legislators charged by Congress with their care. If we pursue this detail further it would not change, but only emphasize the result. During our entire history the wealth of New England in men of force of character, trained in its institutions and reared in its unbending convictions of duty, has been abundant. Any attempt at this time at placing them and their work in their proper place and relations in the development and administration of our government would be necessarily incomplete and would therefore come short of justice. But their presence at all times, and most in great public emergencies, has always been recognized and felt—often potent enough to be controlling, never so feeble as to be lost sight of. Nowhere has it been more clearly recognized than by Congress itself. Beyond the committal of its most important business to committees in charge of New England men, already alluded to, the same recognition is seen in the choice of the presiding officers of the two bodies. Of the Presidents of the Senate there have been seventeen, including four Vice-Presidents, and of the Speakers of the House seven, selected from New England. Some of these have been called upon to preside on occasions almost revolutionary in their violent character, but always with a temper and force that quieted the storm, and averted open outbreaks. Some of these occasions are too recent to require comment. All of them demonstrate the power of personal influence and courage of convictions indigenous to the soil of New England.

This review of the influence of New England in our national legislation reveals one striking characteristic, attesting more than anything else its force and beneficent tendency. It has been constantly present, and with varying force ever felt and acknowledged. It has not been always infallible and wise—nothing has been—but its general trend and effort have been to the attainment of the highest possible good in government. It has encountered, beyond any other influence, that bitter hostility which other and perverse tendencies always bestow upon the most efficient and formidable opposition to the accomplishment of their evil purposes. The bitter hate and malignant denunciation with which New England activities in Congress have been decorated are so many certificates of efficiency and success in arresting evil and achieving good in the struggle between the good and evil forces ever contending for the mastery in the government we make for ourselves.

There have been great epochs in our history, great crises in the evolution of our institutions. Those pages which shall transmit to coming generations a faithful record of the forces most instrumental in carrying the government safely through these perilous straits, will be replete with the record of the successful endeavors of New England agencies in the attainment of the desired end. The Revolution was born in New England, and was baptised in its blood. There the principles of the Declaration of Independence first found utterance. It was the birthplace of the greatest of orators and expounders of the nature of the government under which we live, of the most learned of the judges, save Marshall, who have sat in judgment upon its powers, of the most eloquent and renowned of all who lifted their voices in behalf of an enslaved race, and it furnished the first martyrs in defense of the Union. It does not seek to disparage or minimize the share to which others are entitled in the great achievements to which attention has been called. It is contented in pointing to its own, and confidently commits it to the just judgment of the future.

What has been said thus far pertains alone to the direct influence of New England upon the legislation of the country, and no account has been taken of that indirect influence which comes from other sections of the country peopled by sons of New England, who have carried with them to new states those stern and aggressive

qualities, inbred and ingrained, that have built up the states they have left, for the purpose of establishing new ones on like stable foundations. The people of New England have been from the beginning a colonizing and propagating people. They have never been content with the narrow limits fixed by their state lines, but have sought out new homes wherever the conditions promised improvement upon the abiding place of their fathers. In proportion to their numbers, the New England states have peopled larger portions of this country than any other section. And wherever they have gone they have carried with them the life and characteristics of New England, and built up institutions and reared a people of a like will and force as that of their progenitors. A historian of rare insight into the genesis of the states has remarked that Ohio began at Marietta. But Marietta was a New England colony, moved bodily, as a tree is transplanted, from its soil, with character as indigenous as the fruit in the native tree. All its elements of development were of as genuine New England stock as were Rufus Putnam and Manasseh Cutler, who led it forth into the wilderness to found a new state.

The "Western Reserve," excepted by Connecticut out of her grant to the Union of her Western lands, and settled largely by emigrants from that state, became first a New England outpost, and afterwards a fortress for the defense and maintenance of the principles that underlie the social and political life of their more eastern home. Such it is to-day. Bancroft says of these settlers that "the compact establishment of the culture of New England in that district had the most beneficial effect on the character of Ohio and the development of the Union." And the influence emanating from these western communities, so effective in the direction of public affairs at the present day, is not the less a New England influence because, in its march westward, it is now found tarrying many miles from its original home. Putnam and Cutler and the pioneers on the Reserve never ceased to be New Englanders, nor do their descendants forget whence came their strength. And the foundation upon which they builded that great state, and its four sisters, was laid in the grand ordinance of 1787, into which Nathan Dane, with the help of Timothy Pickering, both New Englanders, inserted the fundamental law that there should be no slavery in all that new land, that no person should ever be molested on account of his mode of worship or religious sentiments, that every citizen should be entitled to the *habeas corpus* and trial by jury, that schools and education should be forever fostered, and that there should be no entail of estates, but that when not otherwise disposed of by will they should descend to children and their representatives share and share alike. There was hardly a word in all this which was not taken from the code of New England as it had existed for a hundred and fifty years. This was the leaven of all growth in the great states that have since been formed out of that territory. And to what end have they grown? The same historian who spoke of the birth of Ohio at Marietta, contemplating the character and position it had attained under these fundamental New England conditions in ninety years of development, exclaimed, "No citizen of the Republic can glance over the history of the nation and not be thrilled as he contemplates the part which this state has played in that mighty drama, both in war and in peace, and as he reads the roll of its great men, its judges, its generals, its statesmen." Four other states, Indiana, Illinois, Michigan and Wisconsin, were subsequently formed of this territory, and rest for their fundamental law upon the same provisions which have proved the true source of greatness in their elder sister. In them as in her this salutary New England influence is producing consequences which Mr. Webster truly says "we shall never cease to see, perhaps, while the Ohio shall flow." These influences come back into the national councils

with all the vigor and effect that characterized them in the persons of the direct representatives of New England. The inquiry how far the principles which influence New England legislators have been carried by its sons into other new states and have reappeared in their representatives in Congress could be carried much farther and made still more apparent. Enough has been shown, however, to make it plain that the influence of which we speak does not grow weaker or less effective, but rather the more intense and aggressive as the states multiply and emigration from the East flows into them. The recipe by which John Adams proposed to plant a New England in Virginia has been taken by the emigrant into these new states, and its efficacy has been proven in the reproduction on these new resting-places, rich in provisions for the future, of the institutions built up in the harder and sterner life which was the lot of the Pilgrim and Puritan and their descendants. The Ohio River, having on its northern side alone the teachings thus inspired, became, for long years in our history, a dividing line between two civilizations traceable back to the home life and institutions of the settlers on the one side and the other. But the seeds of decay were in the one, and it maintained a feeble existence, beating against a current which was sure, sooner or later to overcome it. The vitality of the others, on the contrary, waxed stronger in its very encounter with difficulties, and pressed forward with greater confidence in an assured triumph at each stage of conflict with opposing forces. It was born of a race bred for strength, both of body and mind, and for persistence and endurance. Of one, a type of this race, it has been well said that "his stock was remarkable for steady vigor, both of body and intellect, and was in fact that genuine aristocracy which—if it be true to its traditions—will remain, as for generations it has been, one of the prime guarantees of the permanence of democracy in America." Thus it has come to pass that New England influence has extended itself far beyond its own narrow borders, and the representatives in national affairs of the states which have since come into the Union under these auspices, have, in all the essentials upon which the greatness and grandeur of the nation rest, stood side by side with those of whose stock they are.

In material interests it is enough to say that the inventive genius of a single New Englander worked an industrial revolution in one-half the states of the Union, till cotton became king, and dominated the politics of the country for fifty years, and all of whose allegiance to this king there was doubt, went into political exile. Whole states were turned over to the pursuit of a new industry made possible by the invention of this "Yankee," and other states were turned to the production of slave labor for their supply. The institutions of these states were made to conform to the requirements of this new industrial system thus created, and their children reared in the unhealthy atmosphere it generated. The final overthrow of this dominating power in the Republic was, in the end, due to the superior vital force and nobler aims which the builders of industrial systems and social Pilgrim and Puritan life have maintained, under modified forms and with changing characteristics, in the states they have peopled. It was a triumph of the New England ideal of absolute equality and universal freedom in the Republic.

The telegraph, the invention of another New Englander, revolutionized the political methods and possibilities of not one-half the states of this Union alone, but of all of them, and of all nations moved and controlled by political methods. It is not too much to say, in brief, and so far as the subject we are considering is concerned, that but for this the Union, as it now exists, could never have been formed or maintained in its integrity. Its extremes would have fallen apart, and the repellent tendency of conflicting interests and unannealed opinions would, for want of

frequent interchange and transmission from one portion to another of so vast and widely separated domain, have disintegrated the whole and made union impossible. The telegraph has annihilated distance so that there are no longer distant extremes, so that time does not cool or harden impulses and passions and antagonisms before they fuse and mingle by contact. The unity of this great republic is thus assured by the telegraph. But the name of Morse and that of Whitney both belong to other chapters in this book, and have no place in this connection except the share their great achievements have had in what New England has done in moulding our institutions. Any attempt to trace the influence of New England through all the multiplied phases of national legislation and administration would be a vain task. Equally vain would be a like attempt to measure the extent or calculate the value of that influence. But the history of our institutions, their genesis and their development, the moulding and adaptation of their functions to the exigencies of an ever-widening realm and a constantly-multiplying people, all make plain the ever-present and ever-potential influence of the New England Ideal.

It is not easy to understand the possibility of the attained results to which this inquiry has led us. What in these elementary forces enabled New England, comparatively no larger than a man's hand on the national map, and with such a fraction of its population, to propagate and maintain to final triumph its ideas of the social compact, and its construction and measure of the powers of a government built and administered by this great people of which it constitutes so small a part? When the Constitution was adopted New England contained only one-fourth of the population for whose government it was established, and one-thirteenth part only of the area brought under its jurisdiction. We have seen how out of proportion to this relative strength in numbers and domain was its influence in determining the character of the institutions established over all. Since then, in the increase of population and expansion of area, this disproportion has greatly increased. The population of New England in 1890 was only one in fifteen of the entire number, and its area one in fifty-four of the whole of our territory. This vast increase of area includes the widest extent of latitude and difference of climate and production, greatly multiplying rival and clashing material interests. It has been peopled from all parts of the world, and from all races of men coming from under governments differing fundamentally from our own. It has, during the hundred years of its existence, encountered many perils, some of which have shaken the very structure itself. Diversity of interests, as well as differences growing out of education and opposing social systems, have caused divisions and engendered bitterness among those who have administered its affairs. And yet the influence of New England, running through all these years, and encountering all these changes, has suffered no diminution of strength nor has it lagged behind. John Fiske, the historian, estimates that one-fourth of the population of the whole country has descended from New England stock. It has kept pace with all other portions in the common march of the country, increasing in strength as strength was needed to hold in check wilder tendencies springing up in new quarters and under new conditions which mislead the too-confiding and endanger the stability of the government and the welfare of the people. The bitter denunciations heaped upon it attest its strength and efficacy. Its presence is often denied by those who do not study the source of public opinion or trace it to its origin. And sometimes those who have yielded to its force and those who have even joined in its pressure have failed to acknowledge its promptings. What that influence has effected and what it has prevented in the development of this great government from the small beginnings at

Plymouth and Jamestown cannot escape recognition by the historian nor fail to strengthen the hope of perpetuity. That this influence has survived all changes and conflicts of a century proves it to be of a different nature from that of all other influences of local origin which have, for any considerable period entitling them to notice, ever affected the course of the Republic. It has been no ephemeral disturbance deflecting the compass for a brief hour and then leaving it to return to the true pole, but it has been from the earliest period, constant, uniform and steady, to be relied upon when other guides failed or became dim and uncertain. It is to-day, no less than in the beginning, elemental and vital. The wisdom that guided the builders cannot with safety be spared to those who keep the house.

This influence was the influence of ideas, of principles, not of men. This is why it has outlived the men who brought those ideas and principles to our shores, and incorporated them in the first written governments on this continent. And this is why it still lives, and will abide a living force while the government shall stand upon the foundation laid by our fathers.

It may not remain local. Indeed, it has long since ceased to be a New England influence merely. And it is all the stronger since the sons of New England have gone forth and built new states upon the same foundations upon which their fathers built the six states which still bear the name of *New England*.


The strength of the Republic lies in thus broadening its foundations, and making common, as far as possible, all the elements which enter as constituents into the framework of the entire structure. There is nothing more hopeful in the signs of the times than the irresistible tendency to unity, regardless of state lines, in all human effort in the land. Common thought, association of labor, union of energy, combination of capital, identity of interest, universal neighborhood, all are not only made possible, but are made necessary by the marvelous revelations of science in this as in no other age. The railroad, the telegraph, the telephone, and kindred inventions have obliterated state lines for all purposes save local legislation, and have made this seventy millions of people one in all the laws which govern human action, or tend to build up the character and give direction to the purpose of a people.



CHAPTER X.

POLITICAL PARTIES.

BY WILLIAM T. DAVIS.

N every country, where a more or less extended right of suffrage is enjoyed, political parties must necessarily exist. As forms of government differ, so the character and methods of parties must also differ. In England, parties may be considered rather parliamentary than popular. They are not the creatures of conventions ; they do not with temporary success exercise the power of removals from office, for the defeat in parliament of a government measure places a new party in power, and thus with an uncertain and perhaps short tenure of office on the part of cabinet members a change in offices would be wholly impracticable.

Unfortunately in the United States it has been a recognized axiom that to the victors belong the spoils, and consequently political parties, in order to keep themselves strong, adopt new policies in the platforms laid down at their National and State Conventions for the sole purpose of catching votes. It is expected that every party man shall yield to the dictation of these conventions, and fall into the support of any measures, however distasteful, which party leaders have declared shall henceforth be party measures. In this way, in order to secure the soldier vote, or the temperance, or woman-suffrage vote, resolutions are passed, and perhaps legislative acts adopted, which are in accordance with the convictions of a really insignificant portion of the people. To get possession of the government, and to hold it, when secured, for the purpose of distributing the spoils, has in these later times become the aim and object of party conventions and party men. The independence exhibited by large numbers of the Democratic party in the late Presidential campaign is a hopeful sign that a better order of things will in the future prevail.

There were, of course, no political parties in the United States before the Revolution. They began to appear in the Convention for framing the Constitution, which was composed of delegates from all the states except Rhode Island. The Federalists were desirous of forming a strong government, with broad powers, a government so centralized and paternal that they were accused by some of their opponents of aiming at a monarchy with an English Prince on the Throne. The Anti-Federalists were in favor of continuing a league between the states, and of a reservation to the states of all the rights and powers secured by the war. The Constitution was, however, adopted and signed by thirty-nine of the fifty-five delegates to the Convention, and was submitted to the thirteen states for their approval. In the state conventions the course of debate was along the line of that pursued in

the general convention. According to the terms of the Constitution, it was to go into effect when adopted by nine states, and, though it was submitted to Congress on the 17th of September, 1787, it was not until June 21, 1788, that it was ratified by the ninth state. The states of New York and Virginia ratified it soon afterwards, but not until 1790 did North Carolina and Rhode Island fall into line.

Thus in the very framing and adoption of the Constitution those parties began to show themselves which, in various forms, and under various names, have continued up to the present time. The Constitution, however, was unsatisfactory to both parties. Some of the states, which ratified it, recommended amendments, and this recommendation, together with the fact that four states were tardy in their ratification, induced Congress at an extra session, held March 4, 1789, to pass various amendments, among which was one providing that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively or to the people." This provision, though thought delusive by the Anti-Federalists, served, however, in a certain measure, to appease them. The first Wednesday of January, 1789, was fixed for the choice of electors for President and Vice-President, and the first Wednesday of February for the voting of the electors. The Constitution, as adopted, provided that "each elector shall vote by ballot for two persons, and that the person having the greatest number of votes shall be the President, if such number be a majority of the whole number of electors appointed; and if there be more than one who have such majority, and have an equal number of votes, then the House of Representatives shall immediately choose by ballot one of them for President; and if no person have a majority, then from the five highest on the list the said House shall in like manner choose the President." It also provided that "in every case after the choice of President, the person having the greatest number of votes of the electors shall be the Vice-President." This method of choosing the President and Vice-President continued until 1803, when an amendment was adopted providing for the method now in use.

At the first Presidential election it cannot be said that any partisan effort was made. George Washington and John Adams were chosen President and Vice-President, the former receiving one vote from each of the electors, and the latter thirty-four votes, while the remaining thirty-five votes were for various other candidates. All of the New England states voted for Washington and Adams. In the formation of the cabinet Washington recognized both parties. Thomas Jefferson, of Virginia, was made Secretary of State; Alexander Hamilton, of New York, Secretary of the Treasury; Henry Knox, of Massachusetts, Secretary of War; Samuel Osgood, of Massachusetts, Postmaster-General, succeeded by Timothy Pickering, of Massachusetts; and Edmund Randolph, of Virginia, Attorney-General; and of these Hamilton, Knox, Osgood and Pickering were Federalists, and Jefferson and Randolph anti-Federalists, and, so far as party contention was concerned, a truce existed. The Postmaster-General is included in this list, but that officer was not made a member of the Cabinet until 1829.

It is a little singular that, in the division of parties at the beginning of our national career, the Cavalier of Virginia should have exchanged places with the Puritan of New England. The former, imbued with aristocratic ideas, from whom almost monarchical views of government might have been expected, was the anti-Federalist and Democrat, while the latter, baptized in the waters of popular rights, and democratic dogmas, became the strongest advocate of a powerful centralized Federal Union. Adams and Jefferson, of Massachusetts and Virginia, one descended from a Puritan ancestry, the other from an ancestry untainted by democratic blood,

became respectively the leaders of the Federal and Anti-Federal Party ; the one freely accused of monarchical tendencies, the other the advocate of liberty, fraternity and equality, and the founder and exponent of democratic principles and measures in accordance with which, during fourteen out of twenty-seven presidential terms, the government has been administered.

The electors of Massachusetts, Connecticut and New Hampshire had voted for Washington and Adams, thus identifying those states with the Federal Party. Rhode Island did not ratify the Constitution until May, 1790, after the election ; Vermont, formerly called the New Hampshire Grants, was not admitted into the Union as a state until March 4, 1791 ; and Maine was, until 1820, a District of Massachusetts. The people of New England were thus, at that time, with practical unanimity on the Federal side, and little was done in the early part of the first presidential term of Washington to cause any change in party feeling, or even to kindle it into activity. At the extra session of Congress, held immediately after the inauguration of Washington, besides the amendments to the Constitution already referred to, measures were adopted regulating commerce and settling a tariff, one of the objects of which was stated to be "the encouragement and protection of manufactures." Thus the first seed was sown which germinated and grew into the protective system, which in later times has become a bone of contention between political parties. At the first regular session of Congress acts were passed assuming the foreign and domestic debt of the confederacy, but the recommendation of Hamilton that the debts incurred by the states during the Revolution should be also assumed was opposed and defeated on the ground that such an assumption would be beyond the powers of the Federal Government. This recommendation was, however, finally adopted by means of a log-rolling method, then for the first time introduced by Hamilton into American politics, of buying practically two Anti-Federal votes from Maryland or Virginia with the promise of a location on the Potomac of the National Capital. On this recommendation the Anti-Federalists were practically united against it, and became crystallized as a party.

At the second session of the first Congress the establishment of a National Bank was recommended by Hamilton, and the Federalists favored and justified it as coming within the legitimate powers of Congress under the Constitution. The Anti-Federalists opposed it, and, while admitting that Congress could pass all laws that might be necessary for the collection of taxes and revenue, they held that a National Bank as the financial agent of the Government was not necessary, and was therefore beyond the power of Congress to create. In the Cabinet, Jefferson and Randolph, Anti-Federalists, favored a veto of the Bank Bill after its passage, and Hamilton argued in favor of the bill. The bill was approved by the President, and thus the question of the constitutionality and expediency of a National Bank became an issue, which was never definitely settled until March 3, 1836, when the National Bank, then in existence, ceased to do business under its charter granted by the United States. The bank chartered in 1791 and opposed by the Anti-Federalists or Democratic Republicans, as they soon after came to be called, and as such will be hereafter referred to in this sketch, was organized with a capital of ten millions of dollars divided into twenty-five thousand shares of four hundred dollars each. It was incorporated under the name of "The President, Directors and Company of the Bank of the United States," and its charter was to continue in operation until March 4, 1811.

In 1808 an application was made for a renewal of the charter, on which no definite action was taken. In February, 1811, a renewal of the charter was again proposed and defeated by the casting vote of the Vice-President, George Clinton, of New York,

a Democratic Republican, and the bank wound up its affairs. During the war of 1812 the banks of the country, except those in New England, suspended specie payments. At the time of the suspension, Alexander J. Dallas, of Philadelphia, was Secretary of the Treasury under James Madison, and immediately after assuming office, he recommended and strongly urged the re-establishment of a National Bank as a means of restoring the finances of the country to a healthy condition. On the 20th of January, 1815, a bill was passed, but vetoed by Madison on the ground that it would not accomplish the desired object. In April, 1816, a new bill was passed, and approved by the President, chartering a bank with a capital of thirty-five millions, composed of three hundred and fifty thousand shares of one hundred dollars each, of which capital seven million dollars were to be subscribed by the United States. The bank went into operation January 17, 1817, and through its agency other banks in the country were enabled to resume specie payments. On the 4th of July, 1832, a bill, re-chartering the bank, was passed, and on the 10th of that month vetoed by President Jackson. Thus the bank, under its United States charter, ceased to exist, by its own limitation, March 4, 1836. It was, however, re-chartered by the state of Pennsylvania in the same year with the same capital. Its further life was short. It suspended specie payments in 1837, and again in 1839, and suspended finally on the 4th of February in that year. After the payment of its debts, nothing was left of its entire capital.

An Excise law was also passed at the second session of the First Congress, which was opposed by the Anti-Federalists or Democratic Republicans. This law imposed a tax on the manufacture of spirits and led to the whiskey rebellion in Pennsylvania. The rebellion, however, was short-lived. No further attempt was made to impose excise taxes until 1813 during the war with England, but the law passed at that time was repealed in 1817. Again, in the war of the rebellion, when every available source of income was tapped by the Government, an elaborate system of excise duties was established, a large portion of which has long since been abolished. Excise laws of all kinds have always been looked upon by the people as obnoxious methods of raising revenue, and only justifiable when devised to meet extraordinary conditions and exigencies. The manner of enforcing them has been considered an unwarrantable interference with private rights, especially to be condemned under a form of government whose laws were devised to protect them.

In the presidential campaign of 1792 the line between the two parties became more distinctly drawn. Washington had yielded to the wishes of the people and consented to stand as a candidate. To the re-election of John Adams as Vice-President, the Democratic Republicans objected and arrayed their forces to defeat him. He had made himself especially obnoxious to them by his vehement opposition to the course which the French Revolution had taken, they being in full sympathy with its democratic tendencies and principles. Washington received the unanimous vote of the electors, one hundred and thirty-two in all, while Adams received seventy-seven; George Clinton, the Democratic Republican candidate, fifty; Thomas Jefferson, four, and Aaron Burr, one. Thus both Washington and Adams, for whom the New England states voted, were re-chosen. Jefferson continued Secretary of State, but left the Cabinet in 1793, and became the acknowledged leader of his party, with Madison, Gallatin and Edward Livingston, among his followers. He was succeeded in the Cabinet by Edmund Randolph, of Virginia, and Timothy Pickering, of Massachusetts. Washington, Adams, Hamilton and John Jay represented the Federal Party, and the contest was one of giants in the political arena. Hamilton continued Secretary of the Treasury until 1795, when he was succeeded by Oliver Wolcott, of

Connecticut. Henry Knox continued Secretary of War until 1795, when he was succeeded by Timothy Pickering, of Massachusetts, who was succeeded in 1796 by James McHenry, of Maryland. Timothy Pickering continued Postmaster-General until 1795, when he was succeeded by Joseph Habersham, of Georgia, and Edmund Randolph continued Attorney-General until 1794, when he was succeeded by William Bradford, of Pennsylvania, who was succeeded in 1795 by Charles Lee, of Virginia.

On the French question the Federal Party advocated a strict neutrality, while the Democratic Republicans avowed their sympathy with the French Republic, and their willingness to aid it in its struggle with European monarchies. In 1778 an offensive and defensive alliance between the United States and France had been formed, and the Republican Party held that the alliance was still in force and that aid should be rendered to France against her enemies. The Federalists considered the alliance nullified by a change of government in France, and that any assistance rendered to the Republic would lead our country into a war with the allied nations of Europe. Washington, representing his party, issued a proclamation of neutrality, which called down upon him the severest denunciations from those who, though not always approving his policies, had heretofore restrained every inclination to attack him personally. The failure to carry out the obligations imposed by the alliance of 1778, and the measures adopted under the inspiration of the neutrality acts of the Government, finally led to those attacks by France on our commerce, which laid the foundation of what have been known in later times as the French claims.

The presidential campaign of 1796 was the first in which there was a contest for the Presidency. Washington had declined a third term, and Adams and Jefferson became the candidates of their respective parties. Most of the Northern States voted for Adams, and most of the Southern for Jefferson. In New England Adams received six votes from New Hampshire, four from Vermont, sixteen from Massachusetts, four from Rhode Island and nine from Connecticut, and Thomas Pinkney, of South Carolina, four from Vermont, thirteen from Massachusetts and four from Connecticut. Adams received seventy-one votes, Jefferson sixty-eight, Thomas Pinkney fifty-nine, Aaron Burr thirty, and among the rest were two for Washington. Under the provisions of the Constitution Adams was declared chosen President and Jefferson Vice-President. Thomas Pinkney of South Carolina was made Secretary of State, succeeded by John Marshall, of Virginia; Oliver Wolcott of Connecticut Secretary of the Treasury; James McHenry of Maryland Secretary of War, succeeded by John Marshall of Virginia, Samuel Dexter of Massachusetts and Roger Griswold of Connecticut; Joseph Habersham, of Georgia, Postmaster-General and Charles Lee, of Virginia, Attorney General, succeeded by Theophilus Parsons, of Massachusetts. The Navy Department was not created until 1798, when George Cabot, of Massachusetts, was appointed Secretary of the Navy, succeeded by Benjamin Stoddert, of Maryland.

During the troubles with France, which seriously embarrassed the Adams administration, two acts were passed by Congress, known as the Alien and Sedition laws, the former on the twenty-fifth of June, 1798, and the latter on the fourteenth of July of the same year. The Alien law, which was limited to two years, empowered the President to order aliens, whom he should judge to be dangerous to the peace of the United States, to quit the country. It was inspired by the fact that many French and English emissaries had come to our shores for the purpose of embroiling the United States in European quarrels. The Sedition law, which was to remain in force until March 4, 1801, provided for the punishment by fine and imprisonment of seditious libels on the Government, and was intended to suppress

the licentiousness of a press conducted largely by adventurers from Great Britain. These laws served to make the Adams administration unpopular with the people, and the opposition to them was intensified by the attempts to enforce them. The Legislature of Virginia passed resolutions declaring them a usurpation of power not granted by the Constitution and calling on other states to protest against them. The Legislature of Kentucky also passed resolutions which not only declared the laws unconstitutional, but claimed that a state might nullify and declare void any Act of Congress which it might consider in violation of the provisions of the Constitution.

Though the claim of Kentucky was far from being sustained by the people, the laws themselves were so generally obnoxious that their passage and enforcement contributed largely to the defeat of the re-election of President Adams. In the campaign of 1800 he was again the candidate of the Federalists, and Mr. Jefferson was made the candidate of the Democratic Republicans. C. C. Pinkney of South Carolina was the Federal candidate for Vice-President, and Aaron Burr of New Jersey the opposing candidate. In the electoral college Jefferson received seventy-three votes, Burr seventy-three, Adams sixty-five, Pinkney sixty-four and John Jay one. In New England Adams and Pinkney received all the electoral votes except one in Rhode Island for John Jay. Under the provisions of the Constitution, the two highest on the list having an equal number of votes, the election went to the House of Representatives. On the first ballot in the House eight states voted for Jefferson, six for Burr and two states were tied. There being no election, the balloting continued from February 11, 1801, until February 17, when on the 36th ballot ten states voted for Jefferson, four for Burr and two voted blank. Jefferson was therefore declared President and Burr Vice-President. James Madison was made Secretary of State, Samuel Dexter of Massachusetts Secretary of the Treasury, succeeded by Albert Gallatin, of Pennsylvania; Henry Dearborn of Massachusetts Secretary of War; Benjamin Stoddert of New Jersey Secretary of the Navy, succeeded by Robert Smith of Maryland; Gideon Granger of Connecticut Postmaster-General; Levi Lincoln of Massachusetts Attorney-General, and Gideon Granger of Connecticut Secretary of the Navy.

During the first term of Jefferson events occurred to make his administration popular with the people. The uneasiness caused by the enforcement of the Alien and Sedition laws under the Adams administration had not abated, and one of the earliest acts of Jefferson was to issue executive pardons to those who were imprisoned under them. Economy was the watchword of the government, and also the restriction of governmental powers within constitutional limits. The chief event was the acquisition by purchase of Louisiana. The territory called by that name included the valley of the Mississippi from its mouth to its head-waters, and an almost boundless tract to the westward. It became known in 1802 that France had acquired this territory from Spain, and an urgent protest was made against its possession by a European nation as powerful as its new possessor. James Monroe was in France on a mission to buy Florida and the Island of Orleans. This Island, so called, included that part of the country bounded by the Gulf of Mexico, the Mississippi River, the Iberville River, or Bayou Marchac as now called, and by Lakes Pontchartrain and Borgne. It was a fortunate time for a negotiation with France. She was preparing for renewed war with Great Britain, and was in need of funds. A favorable opportunity offering, Monroe agreed to buy the whole territory of Louisiana for fifteen millions of dollars. Though exceeding his powers, the Administration and Congress approved of his act, and the purchase was consummated. The transaction was

a brilliant and dazzling one. The immense territory acquired, together with the unobstructed navigation of the Mississippi River from its source to the sea, made the purchase the first important diplomatic act which our government had accomplished. It not only gave to the United States what it could not have long done without, but it undoubtedly saved the Union from a war with one of the most powerful nations of Europe. The temper of our people would not have been long reconciled to the idea of being hemmed in with England on the North, France on the West, and Mexico on the South, and with its greatest water-way controlled by a foreign power. Nothing but war could have extricated us from such a dilemma, had not the statesmanship of Jefferson and Monroe furnished timely relief. The purchase was a most popular one, and the election of 1804 resulted in the overwhelming victory of the Republicans. It is singular that this addition to our territory should have been accomplished by statesmen belonging to the strict constructionist school, and in clear violation of their party doctrines. Under an amendment to the Constitution, passed in 1803, the present method of electing President and Vice-President were adopted, and in the electoral college chosen in 1804 Jefferson, of Virginia, and George Clinton, of New York, received one hundred and sixty-two votes, and Charles C. Pinkney, of South Carolina, and Rufus King, of New York, received fourteen. Of the New England states, Connecticut chose nine electors for Pinkney and King, and the other states voted for Jefferson and Clinton. The members of the new Cabinet were: James Madison, Secretary of State; Albert Gallatin, Secretary of the Treasury; Henry Dearborn, Secretary of War; Jacob Crowninshield, of Massachusetts, Secretary of the Navy; Gideon Granger, Postmaster-General; and Robert Smith, of Maryland, Attorney-General, succeeded by John Breckinridge, of Kentucky, and Cæsar A. Rodney, of Delaware.

During the second term of Jefferson an effort was made to complete the purchase of Florida from Spain; an act was passed to prohibit the importation of certain English goods, and a bill was passed to construct a National Road from Maryland to Ohio. A treaty with England was arranged, but the President rejected it on the ground that it did not forbid the right to search American ships. This act of the President, while increasing his popularity with the people, and strengthening his party, aggravated England, and led it to make continued aggressions on American commerce. The embargo followed in December, 1807, prohibiting American vessels from leaving for foreign ports, and foreign vessels from taking cargoes from the United States, and requiring all coasting vessels to give bonds to land their cargoes within the United States. The embargo was opposed bitterly by the Federalists, in whose ranks were most of the owners of ships engaged in foreign trade, and the courts were appealed to to nullify it. No greater exhibition of patriotism has ever been displayed in our country than that to be found in the decisions of New England United States Judges, whose kinsmen and neighbors were suffering under the decree. Judge John Davis, of the United States Court for the District of Massachusetts, a native of Plymouth, where his brother and townsmen were largely engaged in foreign commerce, boldly sustained the embargo, while lamenting its disastrous effects. In one of his decisions, while upholding the administration, he portrayed in eloquent language the sufferings of those engaged in commerce. He said: "I lament the privations, the interruptions of profitable pursuits and manly enterprises, to which it has been thought necessary to subject the citizens of this great community. I respect the merchant and his employment. The disconcerted mariner deserves our sympathy. The sound of the axe and of the hammer would be grateful music. Ocean, in itself a dreary waste, by the swelling sail and floating streamer, becomes

an exhilarating object; and it is painful to perceive, by force of any contingencies, the American Stars and Stripes vanishing from the scene. Commerce, indeed, merits all the eulogy which we heard so eloquently pronounced at the bar. It is the welcome attendant of civilized man in all his various stations. It is the nurse of arts, the general friend of liberty, justice and order; the sure source of national wealth and greatness; the promoter of moral and intellectual improvement, of generous affections and enlarged philanthropy. Connecting seas, flowing rivers, and capacious havens, equally with the fertile bosom of the earth, suggest to the reflecting mind the purposes of a beneficent Deity relative to the destination and employments of man. Let us not entertain the gloomy apprehension that advantages so precious are altogether abandoned; that pursuits so interesting and beneficial are not to be resumed. Let us rather cherish a hope that commercial activity and intercourse with all their wholesome energies will be revived, and that our merchants and our mariners will again be permitted to pursue their wonted employments consistently with the national safety, honor and independence." Congress, before its adjournment in April, 1808, authorized the President to suspend the embargo whenever he thought it advisable, and, after its continuance for a year and a half, it came to an end. The embargo was popular with the people. Our international relations were such that the choice lay between war, an embargo, or a submission. The first was to be avoided, if possible; the last could not for a moment be thought of, and it was therefore believed that an embargo would be the only means of checking the cruisers of England and France in their practice of preying on our commerce. The Federalists, as a party, bitterly opposed the embargo, especially in New England; but John Quincy Adams, who had been United States Senator from Massachusetts since 1803, supported it, and, in consequence of his attitude on the question, resigned his seat. Mr. Adams, however, represented to the President that the embargo could no longer be enforced in New England, and on the 4th of March, 1809, the Non-Inter-course Act, which had been, at the previous session of Congress, substituted for it, went into operation. This Act was simply an Embargo Act exempting all nations, except England and France, from its operations.

The presidential campaign of 1808 resulted in the election of the Republican candidates, James Madison, President, and George Clinton, Vice-President. In the electoral college the former received one hundred and twenty-two votes against six for George Clinton and forty-seven for Charles C. Pinkney, the latter one hundred and thirteen votes against forty-seven for Rufus King, and fifteen scattering. In New England, New Hampshire, Rhode Island, Connecticut and Massachusetts voted for Pinkney and King; Vermont for Madison and John Langdon, of New Hampshire. Robert Smith, of Maryland, was made Secretary of State, succeeded by James Monroe, of Virginia; Albert Gallatin, of Pennsylvania, Secretary of the Treasury; Wm. Eustis, of Massachusetts, Secretary of War; Paul Hamilton, of South Carolina, Secretary of the Navy; Gideon Granger, of Connecticut, Postmaster-General; and Cæsar A. Rodney, Attorney-General, succeeded by Wm. Pinkney, of Maryland. With the accession of Madison, the Republican Party seemed secure in power. The French decrees, which had been so objectionable, were withdrawn, and the Non-Intercourse Act, so far as it related to France, was repealed, leaving England alone under its operations. Hitherto the Republicans had advocated measures calculated to secure peace, but the insolent bearing of England converted them into a war party, and Henry Clay and John C. Calhoun became their Congressional leaders, the former the Speaker of the House and the latter their recognized head on the floor. New complications having arisen with England, a new Embargo

was laid on American shipping for ninety days, and June 18, 1812, an Act was passed declaring that a state of war with Great Britain existed, and signed by the President. Of the ninety-eight members who voted for war, seventy-six were from the South and West and few were from New England. The war sentiment was so strong in the country that the campaign of 1812 resulted overwhelmingly in the retention of the Republicans in power. Madison received one hundred and thirty-eight votes for President against eighty-nine for De Witt Clinton, of New York, and Elbridge Gerry, of Massachusetts, received one hundred and twenty-one votes for Vice-President, against eighty-six for Jared Ingersoll, of Pennsylvania. In New England, New Hampshire threw eight votes for Clinton for President, and one for Gerry, and seven for Ingersoll for Vice-President; Vermont, eight for Madison and Gerry; Massachusetts, twenty-two for De Witt Clinton, for President, and two for Gerry, and twenty for Ingersoll for Vice-President; Rhode Island, four for Clinton and Ingersoll; and Connecticut, nine for the same. James Monroe was made Secretary of State; Albert Gallatin, Secretary of the Treasury, succeeded by George W. Campbell, of Tennessee, Alexander J. Dallas, of Pennsylvania, and Wm. H. Crawford, of Georgia; John Armstrong, of New York, Secretary of War, succeeded by James Monroe and Wm. H. Crawford; and William Jones, of Pennsylvania, Secretary of the Navy, succeeded by Benj. W. Crowninshield, of Massachusetts; Gideon Granger, Postmaster-General, succeeded by Return J. Meigs, of Ohio; and Wm. Pinkney, of Maryland, Attorney-General, succeeded by Richard Rush, of Pennsylvania. During the early part of the new administration a new Embargo Act was passed, in consequence of an illicit trade from New England to English ships. This new restraint on New England commerce caused the Connecticut Legislature to declare that, in the opinion of that state, the war was unnecessary, and the feeling throughout New England generally against the war was so great and so well known that Massachusetts, Rhode Island and New Hampshire were exempted by the British in their blockade of the ports on the Atlantic coast. In raising men for the war requisitions upon the Governors of Massachusetts and Connecticut for the militia were refused. The most marked event, which occurred in New England during the war, was the Hartford Convention, which met December 15, 1814, at the invitation of the Legislature of Massachusetts, "to confer upon the subject of their public grievances." Delegates were present from Massachusetts, Rhode Island, Connecticut, Vermont and New Hampshire; Maine being then a District of Massachusetts.

The delegates from Massachusetts were George Cabot, William Prescott, Harrison Gray Otis, Timothy Bigelow, Nathan Dane, George Bliss, Joshua Thomas, Hodijah Baylies, Daniel Waldo, Joseph Lyman, Samuel S. Wilde and Stephen Longfellow. Rhode Island sent Daniel Lyman, Samuel Ward, Benjamin Hazard, and Edward Manton. Connecticut sent Chauncey Goodrich, James Hillhouse, John Treadwell, Zephaniah Swift, Nathaniel Smith, Calvin Goddard and Roger M. Sherman. The County of Cheshire in New Hampshire sent Benjamin West, the County of Grafton in the same state, together with the town of Lancaster in Coos County, Miles Olcott, and William Hall, Jr., represented a constituency in Vermont. The Convention was purely a Federal Convention, and in its acts represented the feeling of the Federal Party in New England. It was stated by Theodore Lyman, the author of an account of the Convention published in 1823, that three-quarters of the people of Massachusetts were in favor of the Convention. Caleb Strong, Governor of Massachusetts, and the leader in the movement to call the Convention, was rechosen in 1815, the year after the Convention, over Samuel Dexter, the Republican candidate, by a majority of seven thousand votes.

George Cabot, of Boston, was made President of the Convention, and Theodore Dwight, of Hartford, Secretary. The Convention sat twenty days with closed doors, and, at their adjournment, made reports to their various constituencies, pointing out the dangers to New England arising from usurpations of power by the general government, and declaring that in the power over the militia claimed by the government, and in resorting to conscription, in the enlistment of minors without the consent of their parents and guardians, the Constitution had been disregarded in a way that demanded from the various states firm and decided opposition. The Convention further recommended the adoption by their constituent states of such measures as might protect their citizens from the operation of the acts of Congress subjecting the militia and other persons to forcible drafts or impressments not authorized by the Constitution. The Convention further recommended an application to government by the New England states for authority to combine their forces for defence against the British and to appropriate for the purpose a reasonable amount of the taxes levied upon them.

The Republican Party and the Administration made the most of what was claimed to be the treasonable purpose of the Convention, and Major Jessup, a Kentucky officer, was stationed at Hartford with a regiment of troops to repress any outbreak. That officer, however, reported that the Convention would confine itself to complaints, and that there was no reason to fear any treasonable action. The effect, however, of the Convention was to excite suspicions of a want of patriotism and loyalty on the part of the Federalists, and to strengthen the position of the Republican Party in power. Not the least interesting feature of the acts of the Republican administration and of those of its opponents is the apparent change of places made by them in the construction of the Constitution. The Federals became suddenly jealous of an invasion by the Government of the rights of states, while the Republicans stretched the Constitution to the utmost limits of its most elastic provisions for the successful prosecution of the war.

With the close of the war came the decline of the Federal Party. In the campaign of 1816 James Monroe, of Virginia, and Daniel D. Tompkins, of New York, received each one hundred and eighty-three electoral votes as the Republican candidates for President and Vice-President, against thirty-four for Rufus King, the Federal candidate for President, and the same number for various candidates for Vice-President. The States of Massachusetts, Connecticut and Delaware chose Federal electors, and Vermont, Connecticut and Rhode Island voted for Monroe. John Quincy Adams was made Secretary of State; William H. Crawford, Secretary of the Treasury; Isaac Shelby, of Kentucky, Secretary of War, succeeded by George Graham, of Virginia, and John C. Calhoun; B. W. Crowninshield, Secretary of the Navy, succeeded by Smith Thompson, New York; Return J. Meigs, Postmaster-General; and Richard Rush, of Pennsylvania, Attorney-General, succeeded by Wm. Wirt, of Virginia.

The first term of President Monroe was marked by a change in the attitude of many members of the two parties. The President recommended a Protective Tariff in opposition to the strict construction principles of his party, but the old moderate tariff was retained. Henry Clay, of the Republican Party, advocated a tariff for protection and a system of internal improvements and other measures in direct violation of the doctrines of the party in which he had been a leader. A treaty was concluded with Spain, providing for the purchase of Florida for five million dollars, and the Missouri Compromise of 1820 was passed. The political lines were becoming gradually drawn between those who believed that the Constitution gave Congress

the power to lay duties only for the purpose of providing for the expenses of the Government and the payment of the public debt, and those who held that under the clause providing for the regulation of commerce and for common defense a protective tariff would be strictly within the legitimate powers of Congress. At this period that contest practically began which has made the tariff up to the present time a football between the parties, and in its various changes a disturbing element in the business of the country. A radical protective tariff has been sure to be followed by a radical low one, and, as the pendulum has swung from one to the other, the industries of the country have been constantly kept in a state of uncertainty and doubt.

The presidential election of 1820 was practically a unanimous one for the old candidates. James Monroe had two hundred and twenty-eight votes for President against one for John Quincy Adams, and Daniel D. Tompkins had two hundred and fifteen votes for Vice-President against fourteen for all others. Massachusetts threw fifteen votes for Monroe for President, and seven for Tompkins, and eight for Richard Stockton for Vice-President; Maine, nine for Monroe and Tompkins; New Hampshire, seven for Monroe and one for John Quincy Adams for President, and seven for Tompkins, and one for Richard Rush for Vice-President; Vermont, eight for Monroe and Tompkins; Rhode Island, four for Monroe and Tompkins; and Connecticut, nine for the same. John Quincy Adams was made Secretary of State; Wm. H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; Smith Thompson, Secretary of the Navy, succeeded by Samuel L. Southard, of New Jersey; Return J. Meigs, Postmaster-General, succeeded by John McLean, of Ohio; and Wm. Wirt, Attorney-General. During Mr. Monroe's second term party divisions were almost lost sight of. Both the Federal and Republican Parties were divided on the question of a construction of the Constitution, and a truce seems to have been called until a new alignment could be secured. Philip P. Barbour, of Virginia, a strict constructionist, was chosen Speaker of the House; the loose constructionists passed a bill for the perservation of the National Road, which was vetoed by the President, and the strict constructionists defeated bills for an increase of the tariff. At the next session of Congress, meeting in December, 1822, Henry Clay, who had become a loose constructionist, was chosen Speaker, and his party succeeded in passing a new tariff, higher than any preceding one. After the experience of later years, it seems a little strange that this higher tariff should have been passed without the support of New England. Mr. Webster made a powerful speech against it. He entered Congress as a Federalist, but represented the Federalists of Massachusetts, who were then almost exclusively engaged in commercial pursuits, and were therefore strongly inclined towards free trade. It cannot be said, however, that he denied the constitutionality of protective measures. He thought that the time had not arrived for such a stimulation of American manufactures as could be permanently sustained. In 1828, however, he joined forces with Henry Clay, and became an advocate of that American system of which Mr. Clay was the founder.

The second term of Monroe was distinguished by his message at the beginning of the eighteenth Congress, in which he declared that the United States would neither interfere in any European war nor tolerate any attempt by any European power to acquire a controlling influence on this side of the ocean. This declaration, known as the Monroe Doctrine, was inspired by the war which Spain was then carrying on against her revolted colonies. This doctrine has been reinforced by President Cleveland in his message to Congress concerning Venezuela in 1895, and concerning Cuba in 1896.

In the campaign of 1824 there were no recognized parties, and it became a free race open to all comers. National conventions and nominations had not yet come into use, and the Presidential contest was rather a personal than a party one. In the electoral college Andrew Jackson received ninety-nine votes for President, John Quincy Adams, eighty-four; William H. Crawford, forty-one; Henry Clay, thirty-seven, and John C. Calhoun received one hundred and eighty-two votes for Vice-President against seventy-eight for all others. Mr. Calhoun was declared chosen Vice-President, and, there being no choice for President, the election went to the House, only the three having the highest number of votes being eligible. Clay and Adams being loose constructionists, their friends joined forces against Jackson, a strict constructionist, and the result was that thirteen states voted for Adams, seven for Jackson and four for Crawford. All of the New England states voted for Adams. Henry Clay was made Secretary of State; Richard Rush Secretary of the Treasury; James Barbour, of Virginia, Secretary of War, succeeded by Peter B. Porter, of New York; Samuel L. Southard, Secretary of the Navy; John McLean, Postmaster-General, and William Wirt, Attorney-General.

During the Adams administration the loose constructionists, or Federalists, united under the party name of National Republicans, and the Federal party ceased to exist. The strict constructionists, under the leadership of Andrew Jackson, assumed the name of Democrats, and the Democratic-Republican Party also disappeared. Party lines became now tightly drawn. In the first Congress under the Adams administration, the National Republicans, representing the administration, had a small majority; but in the next Congress New England, New Jersey, Delaware, Ohio, Indiana, and Louisiana were alone represented by the National Republicans, while in New York, Pennsylvania, Illinois, and in every Southern state, except Louisiana, the Democrats prevailed. Notwithstanding the majority held by the Democrats, a tariff bill was passed in 1828, supported by many of the Northern Democratic members, in response to the demands of their constituents, and advocated by Mr. Webster, who now believed that the time was ripe for a positive encouragement of the growing industries of the country.

In the presidential election of 1828 Andrew Jackson was the candidate of the Democrats and received one hundred and seventy-eight votes in the electoral college, against eighty-three for Mr. Adams; while John C. Calhoun received one hundred and seventy-one votes for Vice-President, against eighty-three for Richard Rush, and seven for William Smith, of South Carolina. All the New England electors voted for Adams, except one in Maine, who voted for Jackson. Martin Van Buren, of New York, was made Secretary of State, succeeded by Edward Livingston, of Louisiana; Samuel D. Ingham, of Pennsylvania, Secretary of the Treasury, succeeded by Louis McLane, of Delaware; John H. Eaton, of Tennessee, Secretary of War, succeeded by Lewis Cass; John Branch, of North Carolina, Secretary of the Navy, succeeded by Levi Woodbury, of New Hampshire; William T. Barry, of Kentucky, Postmaster-General, succeeded by Amos Kendall, of Kentucky; and John M. Berrien, of Georgia, Attorney-General, succeeded by Roger B. Taney, of Maryland.

During the administration of Mr. Adams, a party known as the Anti-Masonic Party had its birth. It was inspired by the mysterious fate of William Morgan, of Batavia, New York, the author of a work purporting to expose the secrets of the Masonic fraternity, and by a widespread suspicion that Masons placed their secret obligations above those of citizenship or official duty. The Anti-Masonic feeling became so strong in New York that the National Republicans in 1828 abstained from nominating Free Masons as candidates for state offices, and in that year the Anti-

Masonic Party threw in that state 33,345 votes, out of a total of 276,583. In 1830 that party temporarily displaced the National Republican Party in New York, and succeeded in organizing their party in some of the other states. William H. Seward, Millard Fillmore and Thurlow Weed appeared in politics as Anti-Masonic leaders, and a National Anti-Masonic Convention was held in Baltimore in September, 1831. William Wirt, of Maryland, was nominated for President, and Amos Ellmaker, of Pennsylvania, for Vice-President. Organizations were formed in New York, Pennsylvania, Massachusetts, Ohio, and Vermont; and Vermont in 1832 threw its electoral vote for the Anti-Masonic candidates. In Massachusetts the party made considerable headway. John Quincy Adams, retiring from the Presidency in disfavor with the prevailing party in Massachusetts, was elected a member of Congress by the Anti-Masons of his district in 1830, and held his seat until his death. As a distinct national organization the Anti-Masons made no further effort after the presidential election of 1832, and was practically absorbed by the Whig Party, which soon after made its appearance. They elected Joseph Ritner, however, Governor of Pennsylvania in 1835, and as late as 1840 exhibited those signs of spasmodic action which, in political parties, as well as in the animal body, often exhibit themselves after death.

The first term of Andrew Jackson was marked by stirring events, but little occurred to enter as ingredients into the policies which have been the foundation of party action. The tariff of 1828 met with severe denunciations from the legislatures of Georgia and South Carolina, which redeclared the claim made by Kentucky in 1799, that any state might declare null and void any Act of Congress which in the judgment of the state appeared unconstitutional. In February, 1830, Hayne, of South Carolina, announced in the Senate the doctrine of nullification, but no definite movement in that direction was at that time made. Jackson ended his first term recognized by Calhoun, the Vice-President, and his nullifying followers as a determined opponent of their schemes.

The campaign of 1832 was preceded by three National Conventions, and for the first time formal national nominations were made. The National Republican Convention was held in Baltimore in December, 1831, and nominated Henry Clay for President and John Sergeant, of Pennsylvania, for Vice-President, on a platform advocating Protection, Internal Improvements and a National Bank. The Democratic Convention was held in Baltimore in March, 1832, and nominated for President and Vice-President Andrew Jackson and Martin Van Buren. The Anti-Masons met in Baltimore in September, 1831, and nominated, as has been stated, William Wirt, of Virginia, and Amos Ellmaker, of Pennsylvania. In the electoral college Andrew Jackson had two hundred and nineteen votes for President, Henry Clay forty-nine, John Floyd, of Virginia, eleven, and William Wirt seven, and Martin Van Buren had one hundred and eighty-nine votes for Vice-President, John Sergeant forty-nine, William Wilkins, of Pennsylvania, thirty, Amos Ellmaker seven, and Henry Lee, of Massachusetts, eleven. Maine and New Hampshire voted for Jackson, Vermont for Wirt and Massachusetts, Connecticut and Rhode Island for Clay. Louis McLane, of Delaware, was made Secretary of State, succeeded by John Forsyth, of Georgia; Wm. J. Duane, Secretary of the Treasury, succeeded by Roger B. Taney and Levi Woodbury; Lewis Cass, Secretary of War; Levi Woodbury, Secretary of the Navy, succeeded by Mahlon Dickinson, of New Jersey; Wm. T. Barry, of Kentucky, Postmaster-General, succeeded by Amos Kendall, and Benjamin F. Butler, of New York, Attorney-General. In the early part of the second term of President Jackson he caused the deposits of public funds to be no longer made in the National Bank. The

Sub-Treasury System was proposed, but voted down, and the presidential campaign of 1836 was approached with a good deal of party activity, but with much division in the ranks of the Democracy. Hugh L. White, of Tennessee, was nominated by the Democrats in the legislature of Alabama, and his friends finally joined John Tyler with him as the candidate for Vice-President. The supporters of Jackson nominated Martin Van Buren and Richard M. Johnson, of Kentucky. The National Republicans, who had now assumed the name of Whigs, generally supported Wm. Henry Harrison, of Ohio, and Francis Granger, of New York, who had been nominated by the Anti-Masons of Pennsylvania. There was a strong movement to nominate Henry Clay, but, being a Free Mason, the Anti-Masons exhibited sufficient strength to defeat him. John McLean, of Ohio, was also nominated by the Legislature of that state and Daniel Webster by the Legislature of Massachusetts.

In the Electoral College Martin Van Buren received one hundred and seventy votes for President, Wm. Henry Harrison, seventy-three; Hugh Lawson White, twenty-six; Daniel Webster, fourteen, and Willie P. Mangum, of North Carolina, eleven. Richard M. Johnson had one hundred and forty-four votes for Vice-President; Francis Granger, seventy-seven; John Tyler, forty-seven, and William Smith, of Alabama, twenty-three. The above vote for Van Buren and Johnson includes three votes of Michigan, about the validity of which there was doubt, as that state was not admitted to the Union until January 26, 1837, but which, if thrown out, would not have changed the result. Maine, New Hampshire, Rhode Island and Connecticut, voted for Van Buren, Vermont for Harrison, and Massachusetts for Webster. John Forsyth was made Secretary of State; Levi Woodbury Secretary of the Treasury; Benjamin F. Butler, of New York, Secretary of War, succeeded by Joel R. Poinsett, of South Carolina; Mahlon Dickinson, of New Jersey, Secretary of the Navy, succeeded by James K. Paulding, of New York; Amos Kendall, Postmaster-General, succeeded by John M. Niles, of Connecticut; Benjamin F. Butler, Attorney-General, succeeded by Felix Grundy, of Tennessee, and Henry D. Gilpin, of Penna.

In 1837 an Act was passed to cease the distribution of the surplus revenue among the states. This distribution had been authorized by an Act passed in June, 1836, providing that after January 1, 1837, all surplus revenue exceeding five millions should be divided among the states as a loan only to be recalled by direction of Congress. The sum distributed amounted to twenty-eight millions and has never been recalled. During the last Congress, in the term of Mr. Van Buren, a bill was passed, after several defeats, establishing Sub-Treasuries, and thus one of the pet measures of the Democratic Party was consummated.

In 1839 the Liberty Party made its appearance. On the 13th of November, 1839, a convention of Abolitionists was held at Warsaw, New York, and nominated James G. Burney, of New York, for President, and Francis J. Lamoyne, of Pennsylvania, for Vice-President. Mr. Burney had been a slaveholder in Kentucky, but at the time of his nomination was Secretary of the "American and Foreign Anti-Slavery Society." These nominations were confirmed at a National Convention held in Albany April 1, 1840, which adopted the name of the "Liberty Party." The Whigs nominated Wm. Henry Harrison and John Tyler, and the Democrats Martin Van Buren and Richard M. Johnson. In the Electoral College Harrison received two hundred and thirty-four votes for President, Van Buren, sixty, and John Tyler, two hundred and thirty-four votes for Vice-President; Richard M. Johnson, forty-eight; L. W. Tazewell, of Virginia, eleven, and James K. Polk, one. New Hampshire voted for Van Buren, and the other New England states for Harrison. The Liberty Party candidates received seven thousand and fifty-nine votes from the people.

about one-third of which was thrown in New York and in New England. In 1844 the Liberty Party, at a National Convention held in Buffalo on the 30th of August, nominated James G. Burney and Thomas Morris, of Ohio. These candidates received sixty-two thousand, three hundred votes, of which fifteen thousand, eight hundred and twelve were in New York. The votes of the Liberty Party in New York and Michigan, if thrown for Clay, the Whig candidate, would have given him one hundred and fifty-six votes in the Electoral College against one hundred and twenty-nine for James K. Polk, the Democratic candidate. In 1848 and in 1852 the Liberty Party followed the fortunes of the Free Soil Party and was subsequently absorbed by the Republican Party in 1856.

The Cabinet under Harrison and his successor, John Tyler, was made up by the appointment of Daniel Webster Secretary of State, succeeded by Hugh S. Legaré, of South Carolina, Abel P. Upshur, of Virginia, and John C. Calhoun, of South Carolina; of Thomas Ewing, of Ohio, Secretary of the Treasury, succeeded by Walter Forward, of Pennsylvania, John C. Spencer, of New York, and George M. Bibb, of Kentucky; of John Bell, of Tennessee, Secretary of War, succeeded by John McLean, of Ohio, John C. Spencer, James M. Porter, of Pennsylvania, and William Wilkins, of Pennsylvania; of George E. Badger, of North Carolina, Secretary of the Navy, succeeded by Abel P. Upshur, David Henshaw, of Massachusetts, Thomas W. Gilmer, of Virginia, and John Y. Mason, of Virginia; Francis Granger Postmaster-General, succeeded by Charles A. Wickliffe, of Kentucky; and John J. Crittenden, of Kentucky, Attorney-General, succeeded by Hugh S. Legaré, and John Nelson, of Maryland.

The first Whig administration was inaugurated with every promise of a successful career. President Harrison, however, died April 4, 1841, after he had been just a month in office, and John Tyler became President. At the extra session of Congress, which had been called by President Harrison, but did not meet until the 31st of May, an act was passed, and signed by the President, abolishing the Sub-Treasury. A bill to incorporate a National Bank, which had been one of the chief measures advocated by the Whigs during the Presidential campaign, was passed by Congress, but vetoed by President Tyler on the ground of its unconstitutionality. A new bill was prepared, which it was believed would meet the approval of the executive, but that also was vetoed. The Whig camp became at once demoralized. All the members of the Cabinet resigned, except Mr. Webster, but he, then in the midst of negotiations with Lord Ashburton to effect a treaty with Great Britain concerning the North-Eastern boundary, refused to comply with the demands of Henry Clay and other leaders of his party. A tariff bill, designed simply to provide a revenue, was passed in 1842; and, notwithstanding the success of the Whig Loose Constructionist Party in the election of 1840, power seemed to have fallen into the hands of the Strict Constructionists, with John Tyler as their representative.

In anticipation of the campaign of 1844 the Whig National Convention, held at Baltimore on the 1st of May, nominated Henry Clay, of Kentucky, and Theodore Frelinghuysen, of New Jersey; and the Democratic Convention, held in the same city on the 27th of May, nominated James K. Polk, of Tennessee, and George M. Dallas, of Pennsylvania; the latter being substituted for Silas Wright, of New York, who declined the nomination for Vice-President. The Tariff, Sub-Treasury, and the Annexation of Texas entered largely into the issues of the campaign. A private letter of Mr. Clay, unfortunately coming to light, which was said to have been accidentally dropped, stating that, so far from being opposed to the Annexation of Texas, he would be glad to see it, deprived him of many votes, which finally went to

Burney, the Liberty Party candidate, and undoubtedly lost him his election. In the Electoral College Polk and Dallas received one hundred and seventy votes and Clay and Frelinghuysen one hundred and five. Maine and New Hampshire voted for Polk, and the other New England states for Clay. James Buchanan was appointed Secretary of State by President Polk; Robert J. Walker, of Mississippi, Secretary of the Treasury; William L. Marcy, of New York, Secretary of War; George Bancroft, of Massachusetts, Secretary of the Navy, succeeded by John Y. Mason, of Virginia; Cave Johnson Postmaster-General; and John Y. Mason, Attorney-General, succeeded by Nathan Clifford, of Maine, and Isaac Toucey, of Connecticut.

During the administration of Mr. Polk, while the old party issues still remained, there were those connected with the questions of free or slave territory which began to agitate the public mind, and to honeycomb both parties in the North. The Mexican war was carried on, Texas was annexed, and the Oregon boundary was fixed by treaty with Great Britain. The Sub-Treasury system was again agitated and was finally adopted by law, August 6, 1846.

In the presidential campaign of 1848, a new organization, known as the Free Soil Party, took part. This was composed of three ingredients, the barn-burners or dissatisfied Democrats of New York, the Liberty Party men, and such stragglers from both parties as had become determined to resist the plans of the South to extend slavery into the territories. The Anti-slavery element of this party held a National Convention in Buffalo in the autumn of 1847, and nominated John P. Hale of New Hampshire for President, and Leicester King, of Ohio, for Vice-President. The increasing disaffection in the Democratic Party in New York led them afterwards to withdraw their candidates and take part in the formation of a Free Soil Party. A little later the barn-burners of New York nominated Martin Van Buren, of New York, and Henry Dodge, of Wisconsin, but these nominations were also withdrawn in view of a call which had been issued for a National Free Soil Convention, to be held in Buffalo on the 9th of August, 1848. That Convention was attended by four hundred and sixty-five delegates from eighteen states, including all the New England states, most of the other Northern states, and Delaware, Maryland and Virginia. Martin Van Buren, of New York, and Charles Francis Adams, of Massachusetts, were nominated, and thus cradled the child which in its maturer years grew into the Republican Party.

The National Democratic Convention held at Baltimore on May 22, 1848, nominated Lewis Cass, of Michigan, and William O. Butler, of Kentucky, and the Whig Convention at Philadelphia June 7th, nominated Zachary Taylor, of Louisiana, and Millard Fillmore, of New York. In the Electoral College Taylor and Fillmore received one hundred and sixty-three votes, and Cass and Butler one hundred and twenty-seven. Maine and New Hampshire voted for Cass, and the other New England states for Taylor. Under the Taylor and Fillmore administration John M. Clayton, of Delaware, was appointed Secretary of State, succeeded by Daniel Webster and Edward Everett; Wm. M. Meredith, of Pennsylvania, Secretary of the Treasury, succeeded by Thomas Corwin, of Ohio; George W. Crawford, of Georgia, Secretary of War, succeeded by Edward Bates, of Missouri, Winfield Scott and Charles M. Conrad, of Louisiana; Wm. B. Preston, of Virginia, Secretary of the Navy, succeeded by Wm. A. Graham, of North Carolina, and John P. Kennedy, of Maryland; Thomas Ewing, of Ohio, Secretary of the Interior, succeeded by James A. Pierce, of Maryland, Thomas M. T. McKennon, of Pennsylvania, and Alexander H. Stuart, of Virginia; Jacob Collamer, of Vermont, Postmaster-General, succeeded

by Nathan K. Hall, of New York, and Samuel D. Hubbard, of Connecticut; and Reverdy Johnson, of Maryland, Attorney-General, succeeded by John J. Crittenden, of Kentucky.

The Free Soil Party, though choosing no electors, threw two hundred and ninety-one thousand, two hundred and sixty-three votes. President Taylor died July 9, 1850, after little more than a year's service in the executive chair, and Mr. Fillmore became President. The important political events occurring during the Taylor and Fillmore administration were the passage of the Missouri Compromise bill, and the enactment of more stringent laws providing for the return of fugitive slaves. There can be no doubt that the adoption of the compromise prevented attempts at disunion, which the temper of the North was not at that time prepared to successfully resist. And at the same time the fugitive slave enactments served to strengthen the arm of the North, and nerve it to meet those attempts at disunion which had been postponed. It is a singular fact that the compromise was opposed by the united forces of radical slavery men and the Free Soilers, and, while the former considered it a complete surrender to the North, the latter declared it a complete surrender to the South.

In the campaign of 1852 the same alignment of parties existed. Franklin Pierce of New Hampshire and Wm. R. King of Alabama were nominated by the Democrats at Baltimore in June, 1852, Winfield Scott of Virginia and Wm. A. Graham of North Carolina by the Whigs in Baltimore in the same month, and John P. Hale of New Hampshire and George W. Julian of Indiana by the Free Soilers at Pittsburg in August. Pierce and King received two hundred and fifty-four electoral votes, and Scott and Graham forty-two. Maine, New Hampshire, Rhode Island and Connecticut voted for Pierce, and Massachusetts and Vermont for Scott. The Cabinet of President Pierce was composed of Wm. L. Marcy Secretary of State; James Guthrie of Kentucky Secretary of the Treasury; Jefferson Davis of Mississippi Secretary of War; James C. Dobbin of North Carolina Secretary of the Navy; Robert McClelland of Michigan Secretary of the Interior; James Campbell of Pennsylvania Postmaster-General, and Caleb Cushing of Massachusetts Attorney-General.

During the administration of President Pierce, the Kansas and Nebraska troubles so far made their influence felt as to divide the Whig Party, that portion opposing the Kansas-Nebraska bill finally forming with the Free Soil Party the Republican Party, which took part in the ensuing campaign. In that campaign the remaining portion of the Whig Party joined forces with the American Party, thus increasing the number of parties in that campaign to three. The American Party had for several years taken part in local and state elections, and had chosen their candidates for Mayor in New York and Philadelphia. In one or the other, or both, of the elections of 1854 and 1855 they had carried the state elections in Massachusetts, Delaware, New Hampshire, Rhode Island, Connecticut, New York, California and Kentucky, and had chosen in 1854 many of the members of Congress in those states. In a few words, the cardinal principle of the party was "Americans must rule America." A National Convention was held in Philadelphia February 22, 1856, attended by two hundred and twenty-seven delegates from all the states, except Maine, Vermont, Georgia and South Carolina. Millard Fillmore of New York and Andrew Jackson Donelson of Tennessee were nominated for President and Vice President, and these nominations were adopted by the relics of the Whig Party at a convention held in Baltimore on the 17th of September. The Democratic National Convention was held at Cincinnati on the 2nd of June, 1856, and nominated James Buchanan of Pennsylvania and John C. Breckinridge of Kentucky. The Repub-

lican Convention was held in Philadelphia June 17, and nominated John C. Fremont of California and Wm. L. Dayton of New Jersey. Buchanan and Breckinridge received one hundred and seventy-four electoral votes, Fremont and Dayton one hundred and fourteen, and Fillmore and Donelson eight. The Democratic candidates carried every Southern state, except Maryland, and New Jersey, Pennsylvania, Indiana, Illinois and California, the Whig and American combined carried the state of Maryland, and the Republican candidates the remaining eleven free states, including New England. The total American vote was eight hundred and seventy-four thousand, five hundred and thirty-four, and as a National Party the Americans disappeared from the scene. Their death, however, in local organizations was not immediate. They carried the state elections in 1857 in Rhode Island and Maryland, and in the Congress beginning in December of that year they had about twenty Representatives and five Senators. In the next Congress they had one Senator from Kentucky and one from Maryland and twenty-three Representatives, all from Southern states.

Under the Buchanan Administration the Cabinet consisted of Lewis Cass Secretary of State, succeeded by Jeremiah S. Black of Pennsylvania; Howell Cobb of Georgia Secretary of the Treasury, succeeded by Philip F. Thomas of Maryland and John A. Dix of New York; John B. Floyd of Virginia Secretary of War, succeeded by Joseph Holt of Kentucky; Isaac Toucey Secretary of the Navy; Jacob Thompson of Mississippi Secretary of the Interior; Aaron V. Brown of Tennessee Postmaster-General, succeeded by Joseph Holt and Horatio King of Maine; Jeremiah S. Black Attorney-General, succeeded by Edwin M. Stanton of Pennsylvania.

All through the Buchanan administration it was evident that a serious crisis was approaching. The Republican Party had at its National Convention declared it the right and duty of Congress to prohibit slavery in the territories, and it could not be expected that its electors would be chosen in a single Southern state. It was practically a sectional party, and its eventual triumph could have hardly been expected to be quietly acquiesced in by the South. The Dred Scott decision served to intensify the Northern feeling against slavery, while the raid of John Brown had the effect of intensifying the feeling of the South. At the beginning of the campaign of 1860 it seemed to be plain that both the North and South were ready for the conflict. The Democratic National Convention was held at Charleston, South Carolina, April 23d, 1860, and became hopelessly divided. The Southern faction declared that neither Congress nor the Territorial Legislatures had a right to prohibit slavery in the territories, while the other faction, affirming popular sovereignty, declared that the party should abide by the decisions of the Supreme Court. The latter faction prevailed, and the other seceded from the Convention. Those who remained adjourned, after fifty-seven ballots, to meet in Baltimore on the 18th of June, at which place and time they nominated Stephen A. Douglas of Illinois and Herschel V. Johnson of Georgia. The seceders adjourned to meet in Richmond on the 11th of June, and there nominated John C. Breckinridge of Kentucky and Joseph Lane of Oregon. The American Party, joined with such Whigs as remained true to their old party, met at Chicago May 16, and under the name of the Constitutional Union Party nominated John Bell of Tennessee and Edward Everett of Massachusetts. The Republican Convention met at Chicago May 16th, and nominated Abraham Lincoln of Illinois and Hannibal Hamlin of Maine. The Republicans claimed the freedom and equality of all men, denounced threats of disunion, and declared that Congress was bound to protect and defend the freedom of the territories. Protection, Internal Improvements, the Homestead Bill and a Pacific Railway were

also measures approved in their platform. In the electoral college Lincoln and Hamlin received one hundred and eighty votes, those of all the free states, except three of the seven votes of New Jersey, Breckinridge and Lane received seventy-two, Bell and Everett thirty-nine, and Douglas and Johnson eleven. The Cabinet of President Lincoln consisted of Wm. H. Seward of New York Secretary of State; Salmon P. Chase of Ohio Secretary of the Treasury, succeeded by Wm. Pitt Fessenden of Maine; Simon Cameron of Pennsylvania Secretary of War, succeeded by Edwin M. Stanton of Pennsylvania; Gideon Welles of Connecticut Secretary of the Navy; Caleb B. Smith of Indiana Secretary of the Interior, succeeded by John P. Usher of Indiana; Montgomery Blair of Maryland Postmaster-General, succeeded by Wm. Dennison of Ohio, and Edward Bates of Missouri Attorney-General, succeeded by T. J. Coffey of Pennsylvania and James Speed of Kentucky.

It is unnecessary to state in detail the events of President Lincoln's first term. Beside those directly connected with the prosecution of the war, those most worthy of mention were the protective tariff of 1861, the Emancipation Proclamation issued January 1, 1863, the act providing for National Paper Currency, the Income Tax Law, the Internal Revenue Law and the National Bank Law. The tariff was what is known as the war tariff and was reported by John Sherman of the Ways and Means Committee.

In 1864 there were three nominations made for the Presidency and Vice-Presidency. A convention of those wishing a bolder management of the war, and a harsher treatment of the Confederates, was held at Cleveland, Ohio, May 31st, and nominated John C. Fremont of California, and John C. Cochrane of New York. The Republican Convention met at Baltimore June 7th, and nominated Abraham Lincoln of Illinois, and Andrew Johnson of Tennessee. The Democrats met at Chicago August 29th, and nominated Geo. B. McClellan of New Jersey, and George H. Pendleton of Ohio, declaring that the war was a failure and that hostilities should cease. The election was participated in by all the states not in rebellion, and Lincoln and Johnson received two hundred and twelve votes and McClellan and Pendleton twenty-one votes from New Jersey, Delaware and Kentucky.

President Lincoln was killed on the 14th of April, 1865, and Andrew Johnson became President. The members of the Cabinet during the remainder of the presidential term were Wm. H. Seward, Secretary of State; Hugh McCulloch of Indiana, Secretary of the Treasury; Edwin M. Stanton, Secretary of War, succeeded by U. S. Grant of Illinois, Lorenzo Thomas of Delaware, and John M. Schofield of Illinois; Gideon Welles, Secretary of the Navy; John P. Usher, Secretary of the Interior, succeeded by James Harlan of Iowa, and Orville H. Browning of Illinois; Wm. Dennison, Postmaster-General, succeeded by Alexander W. Randall of Wisconsin; and James Speed of Kentucky, Attorney-General, succeeded by Henry Stanbery of Ohio, and Wm. M. Evarts, of New York.

During the term of Lincoln and Johnson measures of Reconstruction occupied largely the attention of Congress. The 14th Amendment to the Constitution was adopted securing certain rights to freedmen; a bill to provide efficient governments for the Southern states was passed; the 15th Amendment to the Constitution was adopted guaranteeing the right of suffrage without regard to race, color or previous condition of servitude, and the trial of Andrew Johnson under articles of impeachment for violation of the Tenure of Office bill was begun March 5, 1868, ending on the 16th of May, with a verdict of acquittal, only thirty-five out of fifty-four Senators voting for conviction and a two-thirds vote being necessary. In the 39th Congress Justin S. Morrill reported the tariff act of 1867.

In 1868 the presidential contest was confined to two parties. The Republican Convention met at Chicago, May 20, 1868, and nominated Ulysses S. Grant, of Illinois, and Schuyler Colfax, of Indiana, and the Democratic Convention met in New York City, July 4th, and nominated Horatio Seymour, of New York, and Francis P. Blair, of Missouri. The most pronounced issues of the campaign related to constructions of the Constitution as to the powers of Congress over the states lately in rebellion. The Democrats consistently adhered to their traditional strictness of construction, while the Republicans, following in the footsteps of their progenitors, the Whig and Federal parties, adopted the most liberal construction of that instrument which might be necessary to meet new conditions and circumstances. Grant and Colfax received two hundred and fourteen electoral votes, including all the votes of the New England states, and Seymour and Blair eighty.

President Grant appointed Elihu B. Washburn, of Illinois, Secretary of State, succeeded by Hamilton Fish, of New York; George S. Boutwell, of Massachusetts, Secretary of the Treasury; John A. Rawlins, of Illinois, Secretary of War, succeeded by William T. Sherman, of Ohio, and William W. Belknap, of Iowa; Adolph E. Borie, of Pennsylvania, Secretary of the Navy, succeeded by George M. Robeson, of New Jersey; Jacob D. Cox, of Ohio, Secretary of the Interior, succeeded by Columbus Delano, of Ohio; John A. J. Creswell, of Maryland, Postmaster-General; and E. Rockwood Hoar, of Massachusetts, Attorney-General, succeeded by Amos T. Akerman, of Georgia, and George H. Williams, of Oregon.

During the first term of President Grant further reconstruction measures were adopted. There were many Republicans who had come to believe that some of these measures had been adopted in violation of constitutional powers, and that the amendment to the Constitution giving the freedman the right of suffrage was unwise. These persons, assuming the name of Liberal Republicans, met in convention in Cincinnati on the 1st of May, 1872, and nominated Horace Greeley, of New York, and B. Gratz Brown, of Missouri. The Democratic Convention, held in Baltimore, July 9th, adopted these nominations, but a portion of the party, not satisfied with this abandonment of old convictions, met at Louisville, September 3rd, and nominated Charles O'Connor, of New York, and John Quincy Adams, of Massachusetts. The Republican Convention was held in Philadelphia, June 5th, and nominated Ulysses S. Grant, of Illinois, and Henry Wilson, of Massachusetts. The Temperance Party nominated James Black for President, and A. H. Colquitt for Vice-President. Mr. Greeley died after the election, but before the meeting of the electors, and consequently the Democratic electors were compelled to vote for other persons. The result was that Grant had two hundred and eighty-six votes for President; Thomas A. Hendricks, of Indiana, forty-two; B. Gratz Brown, of Missouri, eighteen; Charles J. Jenkins, two, and David Davis, one. For Vice-President, Henry Wilson had two hundred and eighty-six; B. Gratz Brown, forty-seven; A. H. Colquitt, five; John M. Palmer, three; George W. Julian, five; T. E. Bramlette, three; Willis B. Machen, one, and Nathaniel P. Banks, one. The O'Connor and Adams ticket received of the popular vote, twenty-nine thousand, four hundred and eight, and James Black, the Temperance candidate, fifty-six hundred and eight. All of the New England states voted for Grant and Wilson.

The Cabinet during President Grant's second term consisted of Hamilton Fish, Secretary of State; Wm. A. Richardson, of Massachusetts, Secretary of the Treasury, succeeded by Benjamin H. Bristow, of Kentucky, and Lott M. Morrill, of Maine; Wm. W. Belknap, Secretary of War, succeeded by Alphonso Taft, of Ohio, and James Don. Cameron, of Pennsylvania; George M. Robeson, Secretary of the Navy;

Columbus Delano, Secretary of the Interior, succeeded by Zachariah Chandler, of Michigan; John A. J. Creswell, Postmaster-General, succeeded by James W. Marshall, of Virginia, Marshall Jewell, of Connecticut, and James M. Tyner, of Indiana; and George H. Williams, Attorney-General, succeeded by Edwards Pierrepont, of New York, and Alphonso Taft, of Ohio.

Without any distinct change of issues between the Republican and Democratic parties the presidential campaign of 1876 was reached. But a new party now entered the field known as the Greenback Party. Though it had existed for some years in an inchoate form, its appearance as a national party was inspired by the passage of the Resumption Act, committing the Government and people to the payment of the public debt in specie. The measures advocated by the party were the withdrawal of bank currency, the issue of paper currency by the Government, and the payment in coin of interest on the then existing national debt, and of only that portion of the principal for which coin had been specifically promised. In anticipation of the campaign of 1876, a National Convention was held at Indianapolis May 17, and Peter Cooper, of New York, and Samuel F. Cary, of Ohio, were nominated. The Republican Convention was held at Cincinnati June 14, and nominated Rutherford B. Hayes, of Ohio, and Wm. A. Wheeler, of New York. The Democrats met at St. Louis June 27, and nominated Samuel J. Tilden, of New York, and Thomas A. Hendricks, of Indiana. It is not proposed to refer in detail to the disputed election and the method of settling it. Those are rather historic events outside of the current of political parties. Hayes and Wheeler received one hundred and eighty-five electoral votes, and Tilden and Hendricks, one hundred and eighty-four. Connecticut voted for Tilden and the other New England states for Hayes. Of the popular vote Cooper and Cary received eighty-one thousand, seven hundred and forty-one, and Green C. Smith and R. T. Steward, the Prohibition candidates, ninety-five hundred and twenty-two.

The Cabinet of President Hayes consisted of Wm. M. Evarts, of New York, Secretary of State; John Sherman, of Ohio, Secretary of the Treasury; George W. McCrary, of Iowa, Secretary of War, succeeded by Alexander Ramsey, of Minnesota; Richard W. Thompson, of Indiana, Secretary of the Navy, succeeded by Nathan Goff, of West Virginia; Carl Schurz, of Missouri, Secretary of the Interior; David Key, of Tennessee, Postmaster-General, succeeded by Horace Maynard, of Tennessee, and Charles Devens, of Massachusetts, Attorney-General.

During the administration of President Hayes the leading events were the silver agitation, which resulted in the passage of an Act February 28, 1878, for the coinage of the standard silver dollar, and an Act for the resumption of specie payments at the beginning of 1879. The campaign of 1880 was preceded by the usual conventions, of which there were four. At the Republican Convention, held in Chicago June 2, 1880, James A. Garfield, of Ohio, and Chester A. Arthur, of New York, were nominated. The Greenback Convention was held in Chicago June 9th, and nominated James B. Weaver, of Iowa, and B. J. Chambers, of Texas. The Prohibition Convention was held at Cleveland June 17, and nominated Neal Dow, of Maine, and A. M. Thompson, of Ohio. The Democratic Convention was held in Cincinnati June 22, and nominated Winfield S. Hancock, of Pennsylvania, and Wm. B. English, of Indiana. In the Electoral College the Republican ticket received two hundred and fourteen votes and the Democratic one hundred and fifty-five. All of the New England states voted for Garfield and Arthur. Of the popular vote the Greenbackers threw three hundred and eight thousand five hundred and seventy-eight votes, and the Prohibitionists ten thousand three hundred and five. Of the former eleven

thousand, eight hundred and three were in the New England states, and of the latter thirteen hundred and eighty-four. President Garfield died September 19, 1881, and Mr. Arthur became President. The members of the Cabinet during the four years were, James G. Blaine, Secretary of State, succeeded by F. T. Frelinghuysen, of New Jersey; Wm. Windom, of Minnesota, Secretary of the Treasury, succeeded by Charles J. Folger, of New York, Walter Q. Gresham, of Indiana, and Hugh McCulloch, of Indiana; Robert T. Lincoln, of Illinois, Secretary of War; Wm. H. Hunt, of Louisiana, Secretary of the Navy, succeeded by Wm. E. Chandler, of New Hampshire; Samuel J. Kirkwood, of Iowa, Secretary of the Interior, succeeded by Henry M. Teller, of Colorado; Thomas L. James, of New York, Postmaster-General, succeeded by Timothy O. Howe, of Wisconsin, Walter Q. Gresham, of Indiana, and Frank Hatton, of Iowa; and Wayne MacVeagh, of Pennsylvania, Attorney-General, succeeded by Benjamin H. Brewster, of Pennsylvania.

The leading events during the term were the Tariff of 1883, a Civil Service Reform Act, the creation of a Tariff Commission and laws against Polygamy and Chinese Immigration. In 1884 the first National Convention was held of the Anti-Monopoly Party, which met in Chicago, May 14, attended by delegates from seventeen states, and nominated Benjamin F. Butler, of Massachusetts, for President, and accepted A. M. West, of Mississippi, the candidate of the Greenback Party, for Vice-President. The National or Greenback Party met in convention in Indianapolis, May 28, and nominated Benjamin F. Butler and A. M. West. The Republican Convention met in Chicago June 3, and nominated James G. Blaine, of Maine, and John A. Logan, of Illinois. The Democratic Convention met in Chicago July 8, and nominated Grover Cleveland, of New York, and Thomas A. Hendricks, of Indiana. A convention, representing a party called the American Prohibition Party, met in Chicago, June 19, and nominated Samuel C. Pomeroy, of Kansas, and John A. Conant, of Connecticut, while the National Prohibition Convention, held at Pittsburg, July 23, nominated John P. St. John, of Kansas, and Wm. Daniel, of Maryland. The whole number of votes in the Electoral College was four hundred and one, and of these the Democratic ticket had two hundred and nineteen, and the Republican one hundred and eighty-two. Of the popular vote Benjamin F. Butler received one hundred and seventy-five thousand, three hundred and seventy, and John P. St. John one hundred and fifty thousand, three hundred and sixty-nine. Of the New England states, Connecticut voted for Cleveland, and the others for Blaine, and in all the New England states Butler received thirty-one thousand, eight hundred and thirty-three, and St. John eighteen thousand, seven hundred and forty-two. The members of President Cleveland's Cabinet were, Thomas F. Bayard, of Delaware, Secretary of State; Daniel Manning, of New York, Secretary of the Treasury, succeeded by Charles S. Fairchild, of New York; William C. Endicott, of Massachusetts, Secretary of War; William C. Whitney, of New York, Secretary of the Navy; Lucius Q. C. Lamar, of Mississippi, Secretary of the Interior, succeeded by William F. Vilas, of Wisconsin; Norman J. Colman, of Missouri, Secretary of Agriculture; William F. Vilas, Postmaster-General, succeeded by Don M. Dickinson, of Michigan, and Augustus H. Garland, of Arkansas, Attorney-General.

The leading events during President Cleveland's term were the passing of the Presidential Succession bill, the settlement of the method of counting electoral votes, and the message of the President at the beginning of the first session of the fiftieth Congress, containing a strong plea for a revision and modification of the tariff. This message was largely the cause of the defeat of the re-election of the President.

In 1888 two conventions were held in Cincinnati on the 15th of May, that of

the Union Labor Party, and that of the United Labor Party. The former consisted of about two hundred and twenty delegates from twenty states, and nominated A. J. Streeter, of Illinois, and Samuel Evans, of Texas. The latter, a small convention, nominated Robert H. Cowdry, of Illinois, and W. H. T. Wakefield, of Kansas. The Democratic Convention, held at St. Louis, June 5th, nominated Grover Cleveland, of New York, and Allen G. Thurman, of Ohio. The Republican Convention, held at Chicago, June 19th, nominated Benjamin Harrison, of Indiana, and Levi P. Morton, of New York. The National Prohibition Convention was held in Indianapolis, May 20, and nominated Clinton B. Fisk, of New Jersey, and John A. Brooks, of Missouri. An American Convention, attended by one hundred and twenty-six delegates, was held in Washington August 14th, and nominated James Langdon Curtis, of New York, and James R. Green, of Tennessee. Between the two leading parties, the tariff was the issue. In the Electoral College the Republican ticket received two hundred and twenty-three votes, and the Democratic ticket, one hundred and sixty-eight. Of the popular vote Fisk received two hundred and forty-nine thousand, five hundred and six votes, and Streeter one hundred and forty-six thousand, nine hundred and thirty-five. The vote of Connecticut was for Cleveland, and that of the other New England states for Harrison. In those states Fisk received nineteen thousand, nine hundred and twenty-nine votes, and Streeter sixteen hundred and fifteen.

The Cabinet of President Harrison consisted of James G. Blaine, Secretary of State, succeeded by John W. Foster, of Indiana; William Windom, of Minnesota, Secretary of the Treasury, succeeded by Charles Foster, of Ohio; Redfield Proctor, of Vermont, Secretary of War, succeeded by Stephen B. Elkins, of West Virginia; Benjamin F. Tracy, of New York, Secretary of the Navy; John W. Noble, of Missouri, Secretary of the Interior; Jeremiah M. Rusk, of Wisconsin, Secretary of Agriculture; John Wanamaker, of Pennsylvania, Postmaster-General, and William H. H. Miller, of Indiana, Attorney-General.

In pursuance of what was claimed by the Republicans as the verdict of the people in favor of a higher protective tariff, the leading event during the administration of President Harrison was the passage of the McKinley Tariff. It may perhaps be fairly claimed that while the tariff message of President Cleveland was the cause of his defeat, the McKinley Tariff was the cause of the defeat of the re-election of President Harrison. The fact is that neither was the election of 1888 a popular verdict in favor of a high tariff, nor the election of 1892 a verdict in favor of a low one, and it is quite probable had the Republicans been content with a conservative protective revision of the tariff, that they would have remained in power.

In 1892 the Republican Convention was held at Minneapolis on the 7th of June, and nominated Benjamin Harrison, of Indiana, and Whitelaw Reid, of New York. The Democratic Convention, held at Chicago June 21, nominated Grover Cleveland, of New York, and Adlai E. Stevenson, of Illinois. The National Prohibition Party held their Convention in Cincinnati June 29th, and nominated John Bidwell, of California, and J. B. Cranfill, of Texas. The People's Party held its first National Convention in Omaha July 2d, and nominated James B. Weaver, of Iowa, and James G. Field, of Virginia. In the Electoral College the Democratic ticket received two hundred and seventy-seven votes, the Republican, one hundred and forty-five, and the People's ticket twenty-two. Of the New England states all except Connecticut voted for Harrison. Of the popular vote Bidwell had two hundred and sixty-four thousand, one hundred and thirty-three, and Simon Wing, of Massachusetts, the Socialist Labor candidate, twenty-one hundred and sixty-four.

The Cabinet of President Cleveland, during his second term, has consisted of Walter Q. Gresham, of Illinois, Secretary of State, succeeded by Richard Olney, of Massachusetts; John G. Carlisle, of Kentucky, Secretary of the Treasury; Daniel S. Lamont, of New York, Secretary of War; Hilary A. Herbert, of Alabama, Secretary of the Navy; Hoke Smith, of Georgia, Secretary of the Interior, succeeded by David R. Francis, of Missouri; J. Sterling Morton, of Nebraska, Secretary of Agriculture; Wilson S. Bissell, of New York, Postmaster-General, succeeded by Wm. L. Wilson, of West Virginia, and Richard Olney, of Massachusetts, Attorney-General, succeeded by Judson Harmon, of Ohio.

The second term of President Cleveland was begun under special embarrassments. The business of the country was suffering from one of those depressions which have at almost regular intervals affected it, and his administration had inherited from its predecessor the perplexing Hawaiian problem. An extra session of Congress was called in 1893 for the purpose of acting on the silver-purchasing clause of an Act passed July 14, 1890, the repeal of which the President believed essential to business relief. The result of Congressional action was a repeal of that clause on the first of November, 1893.

The message of the President in December, 1893, contained a clear and interesting statement of the Hawaiian question, and put an end for at least a time to movements in favor of annexation.

The message of the President in December, 1895, on the Venezuela question laid the foundation for a probable treaty with Great Britain, providing for a settlement by arbitration, not only of the Venezuela dispute, but also of all future controversies.

The message of the President in December, 1896, contained a conservative statement of the Cuban question, and has furnished reason to hope that by the friendly interference of our Government autonomy may be granted to Cuba by Spain and our own peaceful relations with that nation be preserved.

None of these questions treated by the President were strictly party questions, and the position taken by him in his messages, as well as that in connection with the Chicago railroad riot, lost him the support of a considerable portion of his party, so that in the winter of 1895-6 it seemed a foregone conclusion that in the next Presidential campaign that party would be overwhelmingly defeated. By a flank movement, however, on the part of certain party leaders the main issue was so changed as to draw to the support of its candidates accessions of strength from new recruits. The free coinage of silver, advocated all the more strongly after the repeal of the purchasing clause in the Act of July, 1890, found new supporters among those who believed that in the depressed state of their business they would find in it a remedy for all their ills; and the free-coinage sentiment spread with such rapidity, especially in the West and South, as to promise its domination in the Democratic National Convention, to the virtual displacement of the tariff and other questions, which had been the traditional shibboleths of the party.

The campaign began with the National Convention of the Prohibition Party, which was held in Pittsburg, May 28, and nominated Joseph Levering of Maryland, and Hale Johnson of Illinois. The platform of the party favored "the legal prohibition by state and national legislation of the manufacture, importation, exportation and interstate transportation and sale of alcoholic beverages."

The Republican Convention met at St. Louis June 18, and nominated Wm. McKinley of Ohio, and Garret A. Hobart of New Jersey. Its platform favored a protective tariff, sound money, liberal pensions, the Monroe Doctrine and civil service reform.

The Socialist Labor Convention was held in New York July 9th, and nominated Charles H. Matchett, of New York, and Matthew Maguire, of New Jersey. Its platform favored reduction in hours of labor, possession by the United States of mines, railroads, canals, telegraphs and telephones ; possession by municipalities of water-works, gas-works and electric plants ; the issue of money by the United States alone ; the employment of unemployed by the public authorities ; abolition of the veto power ; abolition of the United States Senate ; woman suffrage, and uniform criminal law throughout the Union.

The Democratic Convention was held in Chicago, July 9th, and nominated Wm. Jennings Bryan, of Nebraska, and Arthur Sewall, of Maine. Its platform favored the free coinage of silver and gold at the ratio of 16 to 1, arbitration in railway labor disputes, economy in public expenditures and the Monroe Doctrine, opposition to trusts and pools and to Federal Intervention in local affairs, to life tenure in the public service, to National Bank Currency, to the issue of interest-bearing bonds in time of peace, to a high protective tariff, and to a Presidential third term.

The Silver Party Convention met at St. Louis July 23d, and adopted the candidates and, substantially, the platform of the Democratic Party.

The People's, or Populist, Convention was held at St. Louis July 24th, and nominated Wm. Jennings Bryan, of Nebraska, and Thomas E. Watson, of Georgia. Its platform favored national money, free coinage of silver at the ratio of 16 to 1, the ownership by the Government of railroads and telegraphs, direct election of President and Senators by the people, and employment furnished by the Government.

The National Democratic Convention met in Indianapolis September 3d, and nominated John M. Palmer, of Illinois, and Simon B. Buckner, of Kentucky. Its platform favored the Gold standard, and all the traditional principles of the Democratic Party.

The National Party Convention was held in Pittsburg, May 29th, and nominated Charles E. Bentley, of Nebraska, and James H. Southgate, of North Carolina. Its platform favored the suppression of the manufacture and sale, importation, exportation and transportation of intoxicating liquors, woman suffrage, free silver coinage, Government control of railroads, the election of President and Senators by the people, and liberal pensions.

At the date of this sketch, January 1, 1897, the votes of the Presidential electors have not been cast, but the vote for President will be, for McKinley two hundred and seventy-one, and for Bryan one hundred and seventy-six. The vote for Vice-President will be two hundred and seventy-one for Hobart, and probably one hundred and forty for Sewall, and thirty-six for Watson. Of the popular vote Levering had one hundred and thirty-one thousand, seven hundred and forty-three, Palmer one hundred and thirty-two thousand, eight hundred and seventy, Matchett thirty-six thousand, two hundred and sixty, and Bentley thirteen thousand, eight hundred and seventy-three. All of the New England states chose Republican electors, throwing six hundred and fifteen thousand, seven hundred and thirty-four votes for McKinley and two hundred and forty-three thousand, eight hundred and eighty-five for Bryan. Palmer received in New England twenty-three thousand, nine hundred and seventy votes, Levering nine thousand and forty-eight, Bentley one hundred and ninety, and Matchett twenty-five hundred and ninety-six.

With the above statement of the election of 1896, this sketch of the political parties, which have divided the people of the New England states, must be brought to a close.

CHAPTER XI.

NEW ENGLAND IN THE COLONIZATION OF KANSAS.

BY EDWARD EVERETT HALE.



THE great Missouri question of 1819 and 1820 agitated New England to the very heart. But our generation has forgotten the excitement of the great Missouri controversy ; indeed, every generation has to repeat the experiences and lessons of its founders.

The compromises of the Constitution, as they have been called, were intended to quiet the discussion on the slavery issue between the North and the South. In a way they did so for thirty years. But the South was always jealous of the North, and in the concession of power to the three Virginian dynasties, which held the executive office from 1801 to 1825, a Southern policy, which looked always first to the institution of slavery, governed the national administration. When, therefore, in the year 1819, the question came up of the admission of Missouri as a slave state, the Southern party seems to have taken it for granted that the existence of slavery in that new state would be permitted. On the other hand, the Northern states resented this claim, and the heated Missouri discussion of 1819 followed, precisely as if a like question had not been discussed thirty years before.

The people of Massachusetts, almost unanimously, opposed the extension of slavery into the new state. On the 3d of December, 1819, a great public meeting of the inhabitants of Boston and vicinity was held in the Doric Hall of the State House in Boston. Daniel Webster presided, and in his speech on that occasion uttered what was undoubtedly the real conviction of his life, as to the danger of the farther extension of slavery. A committee was formed, of which he was the chairman, to prepare a memorial to Congress on this subject ; and that memorial is a strong argument in favor of confining slavery to the states already in existence. There is no more scandalous illustration of the falsehood of written history than the entire omission in Curtis's "Life of Daniel Webster," of all reference to the part which he took in the protest of the North on that occasion.

In the treaty with France, regarding the sale to the United States of the territory of Louisiana, no reference had been made to any supposed rights as to slavery of the handful of whites who were on the western side of the Mississippi. And so little idea had Mr. Jefferson or his advisers of the value of their great purchase that Robert Livingston, who made the bargain with Napoleon, in 1803 wrote home to Mr. Jefferson that he had assured every one whom he met that not an emigrant would be sent across the Mississippi river in the next hundred years. So little did the

statesmen of that time anticipate the necessity of making arrangements for the social condition of those who should emigrate.

The agitation on the subject was for a moment numbed, and a certain *status quo* was attained by the passage of what has always been known as the Missouri Compromise. When matters seemed at a deadlock in Washington Henry Clay introduced this compromise, which provided that the state of Missouri, then seeking for existence, should be admitted with the toleration of the institution of slavery, but that in all future time the territory north of the parallel of $36^{\circ} 30'$, which is the southern line of Missouri, should be free territory. This granted to the slaveholders the future state of Arkansas and by implication, perhaps, the future state of Florida; at that moment there was no question with regard to Texas. With the annexation of Texas to the country, the whole question, of course, recurred; for the whole of Texas is south of the line of $36^{\circ} 30'$. The Southern power, with its accustomed alliance in the state of New York, succeeded in carrying the day in that great controversy, and, to the disappointment of the Northern states, the whole territory of Texas was given over to slavery.

Flushed by this triumph and by the virtual triumph which the South won in what were called the "Compromise Measures" of 1850, the handful of men who led the South to its ruin* supposed that they could achieve anything they chose in the future. And accordingly, on the 4th day of January, 1854, Mr. Douglas reported from the Committee on Territories in the United States Senate, the famous Nebraska Bill, providing for a new territory, which was to be named as Nebraska, into which territory slavery might be introduced by persons who owned slaves.

Here was a distinct disavowal of the Missouri Compromise of thirty-four years previous. This act of bad faith was all that was needed to give unanimity to the whole North on this subject. Up to that time the leaders of political parties at the North had spoken of the Missouri Compromise as a sort of ultimatum, and with bated breath. They had conscientiously felt that their fathers had made an arrangement, from which, in a certain way, the North had profited, and that they were bound in honor to respect the conditions of that arrangement. But if this compromise was to be torn to pieces, this point of honor no longer existed. The only difficulty was to know what was the most practical way in which to act.

This difficulty was met promptly by a proposal from Mr. Eli Thayer, a member of the Massachusetts legislature. Mr. Thayer introduced into the legislature of 1854 a petition for the incorporation of the Massachusetts Emigrant Aid Company. The act is in the following words:—

COMMONWEALTH OF MASSACHUSETTS.

In the Year One Thousand Eight Hundred and Fifty-Four.

AN ACT,

To Incorporate the Massachusetts Emigrant Aid Company.

Be it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, as follows:

SECT. I. Benjamin C. Clark, Isaac Livermore, Charles Allen, Isaac Davis, William G. Bates, Stephen C. Phillips, Charles C. Hazewell, Alexander H. Bullock, Henry Wilson, James S. Whitney, Samuel E. Sewall, Samuel G. Howe, James Holland, Moses Kimball, James D. Green, Francis W. Bird, Otis Clapp, Anson Burlingame, Eli Thayer, and Otis Rich, their associates, successors and assigns, are hereby made a corporation, by the name of the Massachusetts Emi-

* Mr. Edward Everett used to say that there were nine of them.

grant Aid Company, for the purpose of assisting emigrants to settle in the West; and, for this purpose, they shall have all the powers and privileges, and be subject to all the duties, restrictions and liabilities, set forth in the thirty-eighth and forty-fourth chapters of the Revised Statutes.

SECT. II. The capital stock of said corporation shall not exceed five millions of dollars. Said capital stock may be invested in real and personal estate: *provided*, the said corporation shall not hold real estate in this Commonwealth to an amount exceeding twenty thousand dollars.

SECT. III. The capital stock of said corporation shall be divided into shares of one hundred dollars each; but no more than four dollars on the share shall be assessed during the year eighteen hundred and fifty-four, and no more than ten dollars on the share shall be assessed in any one year thereafter.

SECT. IV. At all meetings of the stockholders, each stockholder shall be entitled to cast one vote for each share held by him: *provided*, that no stockholder shall be entitled to cast more than fifty votes on shares held by himself, nor more than fifty votes by proxy.

SECT. V. This act shall take effect from and after its passage.

The boldness of this proposal at once arrested attention, and the act was printed in all parts of the country. In point of fact, none of the Western work was eventually done under its provisions. It exists as a splendid monument of the prompt action of the state of Massachusetts; but the subsequent action of the friends of Kansas and Nebraska was taken under other arrangements for incorporation. All the same, it did what it was meant to do. The word ran through the country, North and South, that Massachusetts was going to place five million dollars in the new territory, and was going to send men there who would know how to spend it. Attention was immediately arrested upon the possibilities of emigration into the beautiful region west of Missouri—emigration which would be real emigration, and which would keep out the threatened invasion of slaveholders with their slaves.

The names given as petitioners for this corporation are enough to show how thoroughly the best life of Massachusetts engaged itself in the great enterprise.

Benjamin C. Clark was a philanthropic merchant, whose name in the next generation has been identified with prompt action for the help of suffering and poverty.

Isaac Livermore was a leading merchant in Boston, at the head of that department of business which deals in wools.

Charles Allen was for years a member of Congress from the Worcester district. He had been a judge of high rank in Massachusetts, and was universally respected.

Stephen C. Phillips was for many years the representative in Congress from the Essex district.

Charles C. Hazewell was a distinguished writer for the press.

Alexander H. Bullock is the same who was governor of Massachusetts in the years 1866-68.

Henry Wilson was to be the Vice-President of the United States.

Samuel E. Sewall had been a leader in the abolition movement from the beginning.

Samuel Griswold Howe was the founder of the Institution for the Blind in Boston; an early friend of Greece in her struggles; always in the advance where effort was needed for the rights of men.

Otis Rich was a member of the Massachusetts House of Representatives; he was chairman of the committee who reported the charter.

Moses Kimball was a leader in the Whig Party; at this time a member of the State Senate. For many years after this time he was the most prominent member of the House of Representatives of Massachusetts.

James D. Green was a member of the House, afterwards the mayor of Cambridge.

Francis W. Bird was a noble type of a class of men, fortunately leaders in Massachusetts, who are themselves entirely indifferent to public office or public honor, but who are determined that Massachusetts shall do right and shall lead. Mr. Bird was prominent in the Anti-slavery party of that time.

Otis Clapp, born of the best blood of New England, was member of the House, a merchant in Boston, whose name was identified with efforts for temperance and good government.

Anson Burlingame was the same who went to Washington the next year and challenged Preston Brooks, the would-be assassin, who had struck Charles Sumner in the Senate chamber. Brooks declined the challenge.

These names, probably, are simply the first fifteen names by which Mr. Thayer could readily head his petition. It is almost safe to say that the first fifteen men in Massachusetts whom he could have asked would have joined him. The plan, however, was his, and for a long time the work was his. This list brings together persons who had acted in very different ways in opposition to slavery. Some of them took no active part in the subsequent movement. Among these were Mr. Sewall and Mr. Bird; excepting them the list includes the names of none of those whom we now call the old Anti-slavery war-horses. Those gentlemen distrusted any action which did not look to the destruction of the Union. The gentlemen whose names Mr. Thayer brought together in this act of incorporation which is now historical, were willing to meet the general government on its own terms, which already foreshadowed what was known as "squatter sovereignty." With names as suggestive as these of the determination of the state, Mr. Thayer, whose own name is last but one upon the list, presented it to the House of Representatives, in which he was a member from the city of Worcester.

The bill asked for went immediately through the requisite forms. The charter of the Massachusetts Emigrant Aid Company was signed by Governor Washburn on the 26th of April, and took effect immediately. The moral effect of this act through the whole country can hardly be described. It cannot be overstated. It was like what one sees, when, at a given moment, watched for and prayed for, a great vessel, which seems likely to miss stays in her voyage, feels, happily, one strong gust of a favoring gale, and sweeps forward in her career as her master has determined. Instantly, through the whole North, it was known through every eager hamlet that Massachusetts had taken up the glove which in Washington had been thrown down. Massachusetts was about to send twenty thousand freemen into Kansas, and to spend five million dollars in establishing them there. It may be observed that the charter for this company passed the hand of the Governor of Massachusetts and received her great seal on the 26th day of April. The act, under which Kansas and Nebraska were created territories, was not approved by Franklin Pierce, the President, until the 30th of May.* On the 4th of May the petitioners who have been named met at the State House in Boston and accepted their charter. Massachusetts may be said then to have picked up the gauntlet before it was thrown down.

* It is an interesting note of the public opinion of the time regarding a person now well-nigh forgotten, that in the volume which I take from the Boston Public Library to verify the dates in the statement above, I find this memorandum written by some reader and critic against the name of Franklin Pierce, the President: "To whom Arnold was an angel of light."

The other names signed to the Kansas-Nebraska Act are, Linn Boyd, then Speaker of the National House of Representatives, and D. R. Atchison, President of the Senate. The Kansas-Nebraska Act was always called in New England The Kansas Bill, as to this day The Fugitive Slave Law is generally called The Fugitive Slave Bill. This is the tacit intimation that to the moral sense of New England no formalities could ever make these bills into laws.

A certain interest attaches to one of Mr. Thayer's own briefs, with regard to his plans in the organization of this company. With the purpose of an address to the people, or for the preparation of a proper hand-book or circular, he hastily threw together the following suggestions, which we are glad to copy, and to publish in this form for the first time :

MASSACHUSETTS EMIGRANT AID COMPANY.

PURPOSE.—To organize emigration to the West and to bring it under a *system*.

BENEFITS ARISING FROM THIS ARRANGEMENT.—First, to the emigrants; 2nd, to the country; 3rd, to the company.

FIRST TO THE EMIGRANTS.—First. By diminishing one-half the expense of the journey and protecting from fraud and delay, by providing food and shelter at the lowest price while they are constructing their habitations; saves them and their families from exposure in the wilderness by the company being the real Pioneer.

Second. By advice and assistance of the company's agents in securing a good location in the West.

Third. By the immediate introduction of mechanical arts of all kinds among them.

Fourth. By the immediate advantage of the press, the school and the church—so that the morals and intelligence of their children shall not be forfeited by a life of semi-barbarism, as often happens to settlers in the West.

SECOND TO THE COUNTRY.—First. By extending the area of freedom by creating new free states, a cordon of the sons of liberty to the Gulf of Mexico.

Second. By inducing the poorer population of our Eastern cities, necessarily vicious here, probably will be virtuous there; vice often comes from poverty.

Third. By increasing the commerce of the East by making *Free States* in the Southwest.—*Statistics*.

THIRD TO THE COMPANY.—The pleasure of founding new and free states which bless everybody and injure nobody and of binding them forever to Massachusetts by the strongest ties of gratitude and of filial love; securing to us in all coming time a *commercial benefit*.—*Daughters of Massachusetts*.

Second. By the direct profit to the company from the sale of lands, increased in value by the settlement about them a thousand-fold.

PLAN OF OPERATION (recommended).—First. To organize the company for one year, subject to the confirmation of the stockholders at a meeting held for that purpose on the second Monday in June next.

Second. That the Board of Directors advertise immediately for the lowest proposals for conveying 20,000 emigrants from Boston to the place which the directors shall select for their first settlement.

Third. That the directors construct at such point a boarding-house capable of accommodating 300 persons as expeditiously as shall consist with permanency and economy.

Fourth. That the directors procure and send forward a steam saw-mill, a grist-mill and such other machines as shall be of constant service in a new settlement, and which individual emigrants are unable to purchase. That these machines may be leased or run by the company's agents.

Fifth. That the directors establish, as soon as they shall secure suitable room for the same, a weekly paper devoted to liberty, literature and good morals, which shall be open to letters of the company's exploring agents for unfolding to the people the resources of the new country and aiding in various ways the interests of the new settlement.

Sixth. That whenever the territory has become a free state, the directors shall dispose of all the company's interest therein, replace the money paid out and declare a dividend to the stockholders; that they then select a new field and prepare for the Union another free state in the same way.

It is recommended by your committee that the first settlement made by this company bear the name of that city in this commonwealth which shall have subscribed most liberally to the capital stock of the company in proportion to its last decennial valuation, and that the second settlement be named from that city next in order so subscribing.

When the corporators accepted this charter, they appointed a committee to report a plan of organization; this committee consisted of Eli Thayer, Alexander

H. Bullock, Richard Hildreth, the editor of the *Boston Atlas*, Otis Clapp, of Boston, and myself. They submitted a report at an adjourned meeting, held in Boston. This report showed how large was the movement of emigrants into the country at that time, the arrivals the preceding year having been four hundred thousand. It showed the necessity of provision for those persons at the West, and said that the Emigrant Aid Company was ready to send out emigrants in companies to establish themselves in Kansas. It recommended that the directors contract immediately with some one of the competing lines of travel for the conveyance of twenty thousand persons from Massachusetts to that place in the West which the directors should select for their first settlement. It stated the belief of the writer that individuals could go in such companies for half-price; it recommended the establishment of saw-mills, grist-mills, and a weekly newspaper. And in the fourth article it recommended that, "Whenever the territory shall be organized as a free state, the directors shall dispose of all its interests there, replace by sales the money laid out, declare a dividend to the stockholders, and that they then select a new field and make similar arrangements for the settlement and organization of another free state in this Union."

This report of the Emigrant Aid Company was drawn by myself. I had the advantage of the fullest conference with Mr. Thayer, and it is evident that I used his brief above in the preparation of the report. It was printed at once with an account of the territory to be colonized which had been prepared five years before by Dr. Charles Robinson, a physician of Fitchburg. It makes the first issue of a report on Nebraska and Kansas, which was afterward published almost monthly for two or three years.

The first charter not proving satisfactory, the subscriptions which were at once received were placed for temporary use in the hands of three trustees who acted for some months as the representatives of the subscribers without any legal incorporation. When the great state of Kansas shall have time to erect in her Capitol a group of the statues of her founders, these three must hold distinguished places there. First and foremost in the group will be Eli Thayer. He conceived the plan of organized emigration; he drew the petition for a charter; he carried the charter through; he obtained the requisite funds for a beginning; and, in a word, until Kansas was a free state, he gave his time, his money, and his life to the establishment of freedom. His two associates in the difficult and delicate work of the first summer were Amos A. Lawrence and James M. S. Williams. Mr. Lawrence was at this time forty years old. He was at the head of the great manufacturing house which had been established by Abbott Lawrence and Amos Lawrence, mentioned elsewhere in this volume. By that house the city of Lawrence, on the Merrimac River, had been created, and from them it had received its name. Mr. Lawrence at once put himself in communication with Mr. Thayer, subscribed largely to the new enterprise, and was eventually made the treasurer of the company. Mr. J. M. S. Williams, of the business firm of Glidden & Williams, was a Virginian by birth. All the more he detested slavery and its methods. Mr. Thayer and he worked together in entire sympathy; and until Kansas was free Mr. Williams might be relied upon for counsel or for money.

These three gentlemen, during the whole of the eventful and critical summer of 1854, directed the payment of money and the employment of agents for the work in hand. No time was lost. Dr. Charles Robinson, of Fitchburg, who had been an early settler in California, and had distinguished himself there in the early history of that state, reported almost immediately to Mr. Thayer. Dr. Robinson gave to Mr. Thayer information with respect to the physical aspect of Kansas, through

which he had himself traveled in one of his journeys to California. Mr. Thayer at once printed extracts from Dr. Robinson's journal of that time, and sent him out, incognito as might be said, as an agent in advance, to see what spots would be good spots to occupy. Dr. Robinson's journal shows that he was in Kansas as early as July, 1854; that is to say, within six weeks of the passage of the Act by which the territory was thrown open to settlement.

An Indian reservation, just west of what is now known as Kansas City, compelled him to go nearly forty miles back in the territory for the selection of a proper site for the first colony. This site he determined upon, and here stands city of Lawrence at the present time. He also advised the trustees to purchase an old tavern which was in the infant town of Kansas City. It was just within the Missouri border, but it would serve as a convenient place for the settlers to meet in and move from, where everything would be courteous and kindly to them, and free from the danger of an unfriendly local feeling. This property, first to be obtained, was one of the last properties held by the Emigrant Aid Company.

Dr. Robinson returned to St. Louis with the information gained, and on the 18th of July, 1854, a pioneer party of thirty-five persons left Boston. They arrived at St. Louis on the 24th of July, and located at the position of Lawrence on the 18th of August. They described their new home as "six miles above the mouth of the Wakarusa, a tributary of Kansas River." The second party left Boston on the 29th of August, a third on the 26th of September; the fourth party left on the 17th of October, and the fifth on the 7th of November. The first four of these parties numbered about five hundred people. Most of them established themselves at Lawrence, where they made temporary houses, largely underground, and prepared for the first winter. Explorations, however, were already in progress, which led to the establishment of other towns by the people of Massachusetts.

The after history of these colonists from Massachusetts belongs to the history of Kansas, and is not to be related in these pages. An interesting review of the relations of the Emigrant Aid Company to Kansas, as seen by a gentleman who is closely acquainted with the history of that state, will be found in the *New England Magazine* for 1897. It is written by Professor William H. Carruth, of the University of Kansas, and states with a certain humor and with great accuracy the results in Kansas of the prompt action of the Company here. Our business is rather with the movement in Massachusetts.

Under the inspiration of Mr. Thayer and of his friends, "Kansas Meetings" were held in almost all the large towns of New England and New York. The whole sentiment of the press was favorable to the movement. The committee of Congress, under the direction of Stephen A. Douglas, who reported on this subject, ascribed this movement to a desire to make profit on the part of New Englanders. On the other hand, this is certain that when, on February 7, 1862, the Company sold all its property in Kansas for an amount of money which paid its various debts there, no stockholder ever made any complaint of the loss of his investment. The largest subscribers to the fund in the year 1854, were: Donald McKay, John Milton Forbes, J. M. S. Williams, G. Howland and Frank G. Shaw, C. H. Mills & Co., John Bertram, Eli Thayer, Samuel Cabot, Glidden Williams, William S. Rotch, Geo. W. Howland, and Charles Francis Adams. These and about two hundred others made up the total stock of the Company subscribed in that year, amounting to about \$30,000. Eventually, the amount of stock, according to Mr. Carruth, was \$136,000. The stock was taken very often in single shares, and the shares were worth twenty dollars each. This stock was subscribed not by emigrants, but by persons deter-

mined to help the plan forward. The subscribers directed the movements of the Company.

The leaders of companies were in almost every instance men of enthusiasm, of good position at home, who had determined for years that the Southern supremacy in the councils of the nation should be destroyed. They saw that this was a favorable opportunity to act in that way. Such a man would announce that he was going to Kansas, and would collect around him a company of his neighbors who were disposed to go. Such companies were collected of persons with every motive, but in general no person went who was not of strong anti-slavery sentiment, and who was not ready to risk something in the establishment of that sentiment in Kansas. The Emigrant Aid Company was able to make low rates for tickets, so that any settler who went from New England to Kansas would be apt to go under its auspices. The Company hoped at first to obtain these tickets at half-price; it hardly ever succeeded in this hope, but in no instance did tickets sold at the offices of the Company cost so much as those sold in the general market. There is a good story told, undoubtedly true, that Governor Walker, the pro-slavery governor sent out by President Pierce, and his secretary bought their tickets west at an Emigrant Aid Company's office, and obtained the reduction which the Company made. It was absolutely true that no questions were asked any settler as to the motives with which he went, nor was a cent ever given to a settler for the purpose of assisting him. What the Company did give was, free information at its offices in the East, and the use, almost free, of its hotels and other places of reception in the territory and in Missouri. It also established at various centres steam saw-mills, which were necessary for the building up of a town in a region where there was so little water-power, and where timber was to be found only in favored localities. One of the hand-bills of the time, calling for mass-meetings in the East to further the objects of the Emigrant Aid Company, was headed, "Saw-mills and Liberty!" The Company also established two newspapers in Kansas, one in the German language.

In the winter of 1854-55 a new charter was obtained for the "New England Emigrant Aid Company." This Company was organized at once, on the fifth of March. It assumed all the obligations which had been incurred by the three trustees who had so loyally stood in the breach after the formation. John Carter Brown, of Providence, was chosen President; Eli Thayer and J. M. S. Williams were Vice-Presidents; Amos A. Lawrence was Treasurer, and Thomas H. Webb, Secretary. Twenty-one Directors were chosen, who appointed an Executive Committee of five, beside the Treasurer. This Committee, annually renewed, became the moving power in the Company. The first year it consisted of Mr. Williams, Mr. Thayer, Dr. Cabot, of Boston, John Lowell, of Boston, now U. S. District Judge, and Mr. R. P. Waters, a Salem merchant. The first step was taken. The North and the South alike had been notified that the people of the North meant to take possession of Kansas, and to make it a free state. Mr. Stephen A. Douglas had now avowed himself a patron of "squatter sovereignty," which meant that the people of the territory should themselves determine its institutions. If, then, the North poured in a sufficient number of emigrants opposed to slavery, the battle was won. In point of fact, the North did this. Local wars took place between the territory of Kansas and the state of Missouri. The hotel of the Emigrant Aid Company in Lawrence, by far its most costly property, was taken possession of under the indictment of a pretended Grand Jury, and was burned. The Company, to this hour, has its claim against the general government for having directed this sacrifice, the largest loss which the Company ever sustained.

With the acceptance, by the old subscribers, of the new charter of the New England Emigrant Aid Company, all of them took shares in that Company to the amount of their subscription. Up till that time—namely, the spring of 1855—about thirty thousand dollars had been subscribed and spent.

In the end, the Company, in February, 1862, sold its property in Kansas. In other years it did some work in Texas, sent some emigrants to Oregon, and it sent many thousand men into Florida at the close of the war.

In the great crisis of 1854 and 1855 New England was awakened to thorough enthusiasm. No American, indeed, is more than a few generations from a log cabin, and the passion for emigration is easily aroused. When President Garfield worked out his own genealogy he found that from Ensign Garfield who settled at Watertown in 1630, to Abram Garfield, who removed to Cuyahoga County in 1830, every Garfield had moved his home farther westward, and that each one had settled on new land granted for military service. Men of such blood were not terrified by fears of log cabins or prairie wolves. The practical bent of New England which unites so curiously with its idealism was interested in a project which proposed to settle the slavery question, without more talk, by as simple a process as that which had established freedom of religion, when such freedom was endangered by Laud or Wentworth or Charles.

Whittier, the Quaker poet, wrote an emigrant song, which was sung not only at Kansas meetings, but on the platforms of railway stations, as emigrant parties started, and on the decks of steamboats or in the dark evenings in railway carriages, after they were well on their way.

So soon as the first parties went forward, their letters home were printed in the newspapers, or passed from hand to hand. The hardships which they met seemed to stimulate enthusiasm. And the insolence by which the men of western Missouri interfered with the rights assured by "squatter sovereignty," roused that indignation through the country which never slept until Lincoln was chosen president.

Each company generally comprised several individuals, or, perhaps, several families, from the same town. Wherever one or two people proposed to emigrate, they would be apt to ask that a speaker might be sent to them from the Emigrant Aid Company, or from some Kansas League. He carried with him his map, he explained the situation, he described the wonderful charms of the maiden territory, and of course he dwelt on the great political necessity of the hour. In such a meeting there would probably be one or two persons of intelligence who commanded the respect of their neighbors, and they would organize the party, so far as it had any organization. The Emigrant Aid Company's office was a centre of information, of conversation among those who wished to go, and was made a bureau for their correspondence and intercourse. Dr. Thomas H. Webb, by a fortunate selection, was appointed the secretary of the three trustees who have been spoken of. He was secretary of the company until his death, after it closed all connection with Kansas, a period, as it proved, of many years. The office was in the third story of the building still standing at the corner of Winter and Washington streets. There are many points in this world marked with bronze or marble memorials, in memory of historical events, less important than some which had their origin here.

Here John Brown, of the Adirondacks, of Osawatomie, and at last of Harper's Ferry, made his headquarters in Boston when he came to the East. With his adventures in Virginia the Company had no connection, and to many, perhaps most, of its officers the news of his first success at Harper's Ferry came as an entire surprise. But here, undoubtedly, he met with gentlemen of New England who sympa-

thized in his bold adventure, were willing to see the experiment tried, and supplied the means.

To this office came day after day any persons who had heard of Kansas, and wanted to try the great adventure. As in all enterprises, there were, of course, multitudes of those who wanted to keep books and conduct correspondence at home, while men of bolder spirit should fight the battles of freedom. But here came also enough of those who were determined to go, and went. Here the large body of Directors used to meet once a quarter. The Executive Committee met once a week, and as much oftener as the Secretary needed them. A quorum could be collected at an hour's notice, and often was. There are great difficulties always where by any misfortune a "Directory" has to serve as an Executive. I have never known such difficulties so surmounted and controlled as they were in the organization of this board. I should recommend its plan to any persons in America placed in similar circumstances.

The prominent active members during the critical years from 1854 to 1859 were first the three trustees who have been named, with the omnipresent Mr. Eli Thayer always acting as chairman. His energy and confidence always gave courage to his companions, even under circumstances of the most severe depression. To him is ascribed, correctly or not, the authorship of the saying, "Personal presence moves the world." Certainly his habit and his success justified it.

With these gentlemen there acted on the Executive Committee, from time to time, Dr. Samuel Cabot, Jr., Hon. John Lowell, R. P. Waters, Dr. Le Baron Russell, Mr. C. J. Higginson, Martin Brimmer and George L. Stearns. Every stockholder who made a large subscription was placed on the Board of Directors, which appointed this Executive Committee.

The three trustees, for their first year's enterprise, had, as has been said, but little more than thirty thousand dollars to use. If the Northwestern world of America had not credited them with five million dollars, their efforts would have been puny indeed and futile. But they and the Company after them had the country's exuberant confidence. Agents went with each party. Women and children could be sent forward to join their fathers or brothers who had gone before them. It is worth notice, indeed, that these were the first of those "personally conducted journeys" of tourists which have since taken a part so important in our modern civilization.

Meanwhile at home it might be said that the propaganda sustained itself, and grew by its success. The different speakers at the Kansas meetings paid their own expenses and never expected and never received any compensation. Authentic news from Kansas was the most interesting news which the journals could publish, so that there was no need to subsidize the press of New England. On this point I have a right to speak with some interest, as I was for some years a Director of what might be called the Press Bureau of the Company. At one time I was not so much the Kansas correspondent as the Kansas editor of eight leading journals in New England and New York, in each of which my articles were always printed as if they were editorials. About once in two months Dr. Webb published a new edition of "Information for Emigrants," leaving out what was obsolete in the old numbers and inserting what was more important or new. This series, now very rare and curious, ran through about twenty numbers.

The necessity of introducing steam power in the territory soon became evident. Liberal men in Massachusetts would give ten thousand dollars each to send out an engine, in answer to an appeal for Saw-Mills and Liberty. Hon. William Claflin was such a benefactor. Hon. Tyler Bacheller was another.

Hon. John Carter Brown, of Providence, the head of the great house of Brown, was the first person who subscribed a sum so large. Mr. Brown had just before printed, at his own expense, a new edition of the forgotten pamphlet, which described the effort of Virginia to throw off slavery in 1823. No publisher in Boston or New York dared put his imprint on a pamphlet so unpopular, in the days when Anti-slavery was disapproved in publishing circles, and Mr. John Carter Brown, the millionaire of Providence, was his own publisher. When, in 1855, the New England Emigrant Aid Company was organized, the stockholders were glad to recognize the courage and the generosity of such a man, and chose him their president. Their president he remained through the five years of the struggle. In the summer of 1859, however, it had become certain that Kansas would be a free state. Mr. Brown wrote to the secretary that he did not like to hold a position almost nominal and ornamental, and that he wished his name might be withdrawn whenever the next company election came. The letter was received with regret by the Executive Committee, but they had no right to persuade him to do otherwise after service so valuable.

Nor was it necessary. Early in October John Brown, of Osawatomie, failed in his mad attempt at Harper's Ferry, and was taken prisoner. Half the conservatism of the North was eager to disavow his plans. No man in America was abused as he was, called here a madman and there a traitor. At such a moment John Carter Brown, the millionaire of Providence, leader in its society, in its commerce, in the counsels of the University, wrote to the secretary of the Emigrant Aid Company to beg that he might withdraw his letter of resignation. "This is no time," he said, "for any man who bears the honored name of John Brown to seem to shrink from his responsibilities in the cause of human freedom."

No other being in the world remembered that the same name was borne by the captive in a Virginia prison, and by the president of the New England Emigrant Aid Company. But he remembered it. And his remembrance makes it one of the most honored names in the history of New England.

Without alluding to the civil war which began in Kansas almost immediately, in which armed parties from Missouri attempted to break up the colonies of real settlers, we must hastily follow the work through and in Massachusetts in the years before 1861, when Kansas became a free state. The organization of emigrant parties continued under the same general arrangement as has been described until nearly five thousand emigrants passed from New England into Kansas. As early as the spring of 1855 it was evident that these men would have to fight for their rights, and from the office of the Company the first consignment of one hundred Sharp's rifles was sent out to them in May of that year. The fear that the boxes would be recognized as they crossed Missouri was such that care was taken that in no case should the whole of a rifle be found in one box; and, in fact, they arrived in different consignments at Lawrence, and were put together there.

Kansas Aid Societies, or Kansas Leagues, were established in different towns; Mr. Thayer refers especially to one in Albany, one in Worcester.

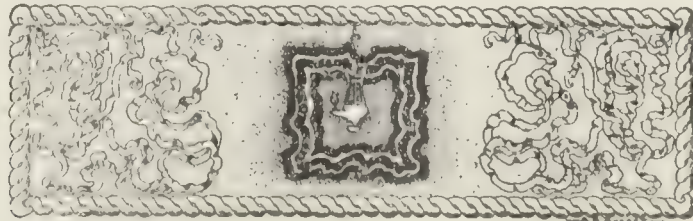
In Kansas and Missouri, at the same time, rewards were offered for Mr. Thayer's head. Mr. Thayer himself was engaged in going from place to place in collecting funds for the great enterprise. In the City of New York, where a society had been established, he was cordially met by George W. Blunt and by William M. Evarts, and others. Mr. Evarts made a speech in which he said he was worth but four thousand dollars, and would give a thousand dollars of it to the new enterprise. A National Kansas Committee was appointed under Mr. Thayer's advice at a convention in

Buffalo. The Fremont canvass of 1856 came on, and in that election Mr. Thayer was himself chosen to Congress.

The movement became general through all the Northern states. The share of it to be recorded in a history of the New England States is this: After the year 1854, of which an account has been already given, in the face of the internal struggles in Kansas, of the certainty that men must protect their rights by force of arms until Kansas was free, the emigration from New England went steadily forward. In the years which followed, in successive parties such as have been described, the Emigrant Aid Company sent forward, as has been said, between four and five thousand men, women and children. These settlers established the towns of Lawrence, Topeka, Osawatomie, Manhattan, Wabaunsee and Burlington. One of its latest acts was to obtain what was supposed to be a controlling interest in the newly-born city of Atchison. That name has become a name of joy and sorrow to so many persons since, that it may be worth while to say that it was given by the pro-slavery founders of Atchison in compliment to Mr. Atchison, the senator from Missouri, who was the most vehement spokesman of the Southern sentiment in all the Kansas discussions. After some years of struggle, these founders came to the Emigrant Aid Company, and offered to sell to it a controlling interest in the city, which it bought. Its directors voted that the name Atchison should be changed to Wilmot, Mr. Wilmot, of Pennsylvania, having been one of the first Democrats who broke from his party; he moved the celebrated Wilmot Proviso in Congress. But the agents of the company in Atchison itself were never able to carry this broad resolution into effect.

The Civil War began. In that war Kansas furnished a larger proportion of young men to the Union army than did any other state. Her young men were used to fighting—it was their profession—and they went into the war for the Union as the legitimate, or indeed inevitable, sequel to the enterprise in which they had been engaged. By one of the early acts of Lincoln's first Congress, Kansas was admitted as a free state. The Emigrant Aid Company then sold out all its property in Kansas to the firm of Adams & Ayling for some sixteen thousand, one hundred and fifty dollars. This was sufficient to pay its debts in the territory, and its official connection with Kansas ceased from that hour.

But the individual directors of that company have always maintained an interest in the state in the foundation of which they had so important a share. And as Mr. Evarts said, as one of the early stockholders, no man who subscribed to the capital stock of the company has ever regretted his investment.



CHAPTER XII.

PROGRESS IN ELECTRICITY.

BY ELIHU THOMSON.

THE many uses to which that mysterious agency called electricity has been applied in the closing years of the present century cannot fail to impress the most casual observer. This period covering the last quarter of the nineteenth century, now drawing to its close, will present for the future historian a peculiar interest, not alone for the great general mechanical advancement, but as being the time during which electricity first became a great factor in human affairs. This period will remain not the less remarkable as one of great activity in the purely scientific study of electric actions; a study engrossing many of the best minds in its ever-widening field of research.

It is but a few years ago that the admirable demonstrations of Dr. Hertz, proving experimentally that light and radiant heat are but forms of electrical energy, were brought before the world. Unfortunately for science, Hertz did not long survive the publication of his remarkable work, which alone entitles him to unending renown. The new radiation of Röntgen depends on electrical discharges for its production in the peculiar vacuum bulb, and is, probably, in its true nature, only a form of electrical manifestation.

What a variety of service is already performed through the use of electrical force! We send and receive communications by telegraph to and from all parts of the world. We transmit signals; it may be only to note the passing hour; it may be to set in motion the whole energy of a modern fire department; or it may be to report changing values of stocks, and excite in some cases more commotion than a fire alarm. Yes, those filmy wires, or even a single one of them, may transmit the words with lightning speed that decide the fate of nations and their peoples. The telephone itself, which has become a real necessity of modern life, is but a speaking telegraph; or one in which the sound waves of the voice give rise to electric waves, which in turn, upon reaching the receiver, are again translated from wire to air.

But this wonder force, electricity, though found to possess the speed of the lightning, coupled with a delicacy of action which enabled it to carry the inexpressibly feeble overtones of a child's voice, was able to support much heavier burdens. We now employ thousands of horse-power of electricity to light our streets and factories, our shops and our homes. We may produce at will a light of such power as to cast shadows in the presence of the sunlight, or we may instead obtain a light of only a small fraction of an ordinary candle in power. We employ the same elec-

tric current to do an infinite variety of service through electric motors, from a fraction of a horse-power to many hundreds of horse-power. We travel swiftly in electric cars, lighted by the current from the same source which propels them, and heated in winter by electric heat from the same wires. Electric power hauls trains in mills and mines; it cuts coal in our mines, and ventilates them; it welds and forges metals. In the electrolytic bath the electric currents either purify metals, or coat metal with metal, as in electro-plating. Aluminium and other difficultly reducible metals are smelted by electricity. Aluminium, which ten years ago cost two dollars an ounce, can now be obtained at less than a dollar a pound, as a result of electric smelting. Electric motors work our elevators, our heavy hoisting and traveling cranes in our factories, and are used to distribute power in many mills. Great distances are covered with but small loss in electric power transmission. Electric furnaces, on account of the extreme temperatures obtainable, are giving birth to many new and valuable products; while even that matchless production of nature, the diamond, can be reproduced from homely soot by electric heat.

No country and no clime have been alone in all this great development. All civilized nations have made their contributions to it. Naturally, however, the industrial centres, the abode of technical science and invention, have far outstripped other regions in the work. No nation has shown a greater activity or made more substantial gifts to the progress of electrical industries and engineering than our own. It is notable that the manufacturing centres in our country were the nuclei from which arose the more important electrical enterprises of to-day: the telephone in Boston; the incandescent lighting system of Edison in the vicinity of Newark, N. J.; the Brush arc-light system in Cleveland; the Thomson-Houston arc system in Philadelphia (afterwards New Britain, Conn., and Lynn, Mass.); the United States and Weston systems in or near New York; the Westinghouse Company in Pittsburg, Pa.

If we look back to the century preceding the present one, we find but few evidences of electrical application, even on the smallest scale. Few of the more important principles of the science had been discovered. During that century the lightning rod of Franklin was invented and applied, not to make use of electricity in service to man, but to ward off the terrors of the uncontrolled and frightful bursts of electric energy of the thunder-storm. It is true that numerous interesting facts and instructive experiments in what is called statical electricity were known, but that important source of electricity, the Voltaic battery, had no existence until the year 1800. Before Volta's discovery of his pile or battery, no means for obtaining a steady electric flow or current were known, and electric energy had exhibited itself to the experimenter in mere fitful flashes or pretty effects, insignificant as to the amount of power or energy involved. Even in the thunder-storm, although the element of power, as manifested by its destructiveness, was not lacking, the character of the exhibition was similar to the pigmy effects produced by the experimenters. We can easily understand the hesitation of an early investigator, who, working with the exceedingly feeble sparks and crackling noises, invoked upon rubbing amber or resinous substances, said there was something in these appearances which resembled lightning and thunder. It remained for Franklin, many years later, with his famous kite experiment, to completely demonstrate the validity of this timidly assumed similarity.

It is now known that the disturbances of electrical condition of equilibrium are to a greater or less degree the accompaniments of very many ordinary actions occurring about us. When we further realize how common some of the simple manifestations of electricity now are, it is indeed difficult to understand how this one of

the great main springs of activity in nature remained almost wholly unknown in ancient times, and continued to be merely a scientific curiosity up to the beginning of the present century. We may recall in illustration the common experience of walking in dry weather over a heavily carpeted surface and of obtaining by the friction sparks of sufficient power to light a gas jet. Or, again, who has not noticed the peculiar effect of combing the hair when dry, and electrical attractions and repulsions so resulting; or the rubbing of a cat's fur with the attendant crackling due to electric sparks and discharges, which can easily be seen in a darkened room? These and other familiar actions may be cited as showing that, in our day at least, we have even in common events sufficient reminders of electrical forces in play. How often do we find that in dry seasons the leather belts of a mill become strongly charged, and emit sparks or long blue brushes of electric fire when objects are approached! Yet the knowledge of the ancients, at least so far as records show, was limited to the fact that when amber, called in Greek, *electron*, was rubbed it would attract light objects. It was even thought to possess a soul on account of its peculiar property. There are even to-day many who confound electrical phenomena with those of life, and thus furnish an ample field for the operations of graceless charlatans with electric combs, hair-brushes, corsets and what not, claimed to cure all diseases.

The question is natural. Why did it never occur to the ancients to try other substances besides amber? Why might not others of them have a soul too, even if it were a smaller one? Just here the contrast between modern methods of inductive research and the ancient idea of the sources of knowledge, is made most evident. A new or curious phenomenon nowadays gives rise at once to investigations in many different directions and with endless variations, but the ancients were more occupied in building elaborate theories on the most slender foundations of fact. We are indeed compelled to infer that our distant forefathers were either poor scientific observers or still poorer investigators of simple facts, or that their conditions of life were such as to render actions so commonly and spontaneously brought about in our time, inconspicuous. Well-warmed, thickly carpeted rooms were certainly not available in the olden time. Combs of such highly electric materials as rubber or celluloid were absent. Belted machinery running in heated mills or factories was reserved for our day. The ancients had no great spinning mills such as exist now, where in spite of all precautions to keep the air moist, the great bug-bear is the frictional development of electricity in the threads. In fact, without the precautions, it is doubtful if such a mill could run in dry weather, and, if it were possible, the loss of product would be very large. But it is difficult to believe that even in hand-spinning of certain fibres, differences of behavior under different conditions of the air, did not present themselves even in very early times. If so, they led to no investigation. In fact the modern scientific method of discovering truth had no place in the world's activities. It was also noticed in early times that masses of iron ore called lodestone would attract other pieces of the same mineral or pieces of metallic iron, but it remained for Dr. Gilbert, of Colchester, England, to make any consistent investigation of the phenomena of magnetism, and to publish in 1600 an account of his inquiries. His great work "*De Magnete*" came at the very beginning of progress in electrical discovery, which in these later years has become so important as to mark a veritable era in world history. Gilbert's study of the magnet was one of the first examples of the application of the inductive method to the study of natural phenomena, even preceding the *Novum Organum* of Bacon, which first explained the method. Not only did Gilbert study the lodestone and magnet with a thoroughness which is sur-

prising even at this day, but he pointed out the fact that many other substances besides amber become possessed of the power of "electrical attraction" when rubbed. He was the first to speak of electrical attraction. Dr. Priestly, the famous philosopher and discoverer of oxygen gas in the last century, called Gilbert the "father of electricity." Gilbert was indeed far ahead of his time, for during the next hundred years after him but little additional progress was made in the service.

In the latter part of the seventeenth century Boyle repeated some of the experiments of Gilbert, and added his own discoveries. Otto Guericke, the inventor of the air-pump, followed by constructing the first simple machine designed for the production of electricity: a globe of sulphur revolved on a shaft, and rubbed by the hand held against it. He was enabled to study the attractions and repulsions of electrified bodies, and to observe the noise and luminosity of the electric discharge. But a certain Dr. Wall is said to have produced the sparks and cracklings in a more pronounced way, apparently being at the time unaware of Guericke's work. Remarking on the results of his experiments, Dr. Wall said: "This light and crackling seem in some degree to represent thunder and lightning."

At the beginning of the eighteenth century these investigations were continued by others, the most prominent being Mr. Hawksbee, who discovered many new facts, the interpretation of which was reserved for a much later period. The discovery, simple though it may appear to us, that some substances could conduct electricity, while others, now known as insulators, could almost prevent its passage, was made by Stephen Gray in 1729. Du Faye, in Paris, followed by formulating the laws of electrical attraction and repulsion. His great achievement, however, was the important discovery of the two kinds or states of electricity now called positive and negative. Although Du Faye published his discovery in 1733, its truth was hardly recognized till much later in the same century, when the study was taken up by many others, and notably by the Boston printer, Benjamin Franklin.

This truly wonderful man, no less wonderful for his versatility of talent than for his thorough mastery of such subjects as became his studies, was about forty years of age when he began experimenting in electricity. He had been in correspondence with a friend, Peter Collinson, of London, who sent to Franklin, about 1745, an account of the then recent electrical experiments, together with some simple apparatus and directions for its use.

The immediate outcome of a series of experiments by Franklin and his friends was a number of important discoveries, as well as the proposal of novel theories to account for various phenomena of electricity. He communicated his results to Collinson in a series of letters beginning in 1747. These letters were published, and created a profound sensation in the scientific world. They were translated into various languages, and the experiments and observations were repeated in all civilized countries. Franklin at once became famous as a leader in electrical science. There soon followed his declaration of the identity of lightning with electrical discharges, and his proposal to put the matter to experimental test. It is true that it had long been hinted that there might be some relationship between the impressive phenomena of a thunderstorm and the laboratory experiments in electricity, but no one seems to have clearly asserted such relationship before it was done by Franklin. It turned out that, following his suggestion, the actual demonstration was made in France about a month before he tried the kite experiment in Philadelphia. News of the French success had not reached Franklin at the time. The practical character of mind possessed by this great philosopher and statesman is no better shown than in his proposal, following immediately upon his kite experiment, to defend his fellows

from the danger of lightning stroke by the erection of lightning conductors upon high buildings, spires, chimneys, and the like. The simple expedient proposed by Franklin has unquestionably saved a vast amount of property and innumerable lives, and although unreasoning critics have from time to time attempted to impugn the efficiency of lightning rods as a protection, the fact remains that the evidence is overwhelmingly in favor of properly erected lightning rods. The advances in electrical science following directly after Franklin's work would require too much space to refer to now.

As early as 1774 we note attempts to apply frictional electricity to telegraphy. These were made by Le Sage, of Geneva, and before the close of the century various other proposals to send signals by electric sparks or discharges were made.

A renewed impetus was afterwards given to these efforts by the advent of the Voltaic battery or pile in 1800—for from this apparatus a real current of electricity was readily obtainable which could be stopped and started at will by simple contact of metals. The difficulty lay, however, in the receiving apparatus. Electro-magnetism was unknown, and it was electro-magnetic discovery which afterward rendered possible the rapid production and recording of signals sent out over a line of wire.

The work of Arago, Oersted, Ampère, of Sturgeon, Henry and others, in the early part of the present century opened the way for the completion of the electric telegraph by Morse in America, and almost simultaneously by workers abroad, each of whom devised forms of electro-magnetic telegraph, some of which soon came into extended use.

It appears that Morse, to whom the greatest credit is due for pushing into successful practical work his form of telegraph, was not alone in his conception of such an invention. Before Morse had entered the field Prof. Joseph Henry had shown the possibility of signaling by electro-magnets over long lines and had demonstrated his theories by experiments on a small scale.

It would carry us beyond the limits of the present paper to review the beginning of the telegraph and the various suggestions of its possibility which actually preceded the real accomplishment. It can truthfully be said that the history of the subject teaches that to no single individual belongs the distinction of having invented the practical telegraph. It was an evolution involving the work of many fertile brains and skillful hands.

Although Morse had fully demonstrated his system in 1837, it was not until 1844 that his first line, running between Washington and Baltimore, was built, and then only after a hard but finally successful struggle to obtain from Congress a grant of money for defraying the cost. Compared with the conditions of electric progress at the present day, the delays and difficulties experienced by Morse and his co-workers seem hard to conceive or explain, but it must not be forgotten that electricity, even as a name, was scarcely known outside the few students of physical science. It had not acquired a reputation for being of practical value or importance, and electric force was regarded as erratic, unreliable, and little subject to control. The complete success achieved by Morse gave rise to a wonderful growth and development in the telegraph itself. In a few years almost all large centres of population had connections to other cities. Even while the telegraph was barely ten years old, the discussion of trans-Atlantic telegraphy began, and culminated in the attempt in 1858 to connect the Eastern Hemisphere with the Western by a thread of copper encased in insulating material lying upon the ocean bottom. The attempt itself failed in one sense, but succeeded in another. Before the cable broke down a few words passed and were understood. The trial was a success in the sense of proving, beyond

a doubt, the feasibility of such a cable as a mechanical structure. That it broke down so soon proved the existence of defects in construction which must be remedied in subsequent cables.

In the second attempt made in 1866, the cable, when partly laid, broke in mid-ocean; yet in spite of discouragements, those who had staked their capital, if not their reputations, as men of sound judgment, did not falter, but persisted in their costly and apparently uncertain undertaking, and were rewarded in 1867 by such a success as opened a new vista in submarine telegraphy. The end of the broken cable of 1866 was actually found, spliced to a new cable, and completed soon after. At the present time, however, a considerable number of working cables are maintained between Europe and America, and the addition of a new cable to those already existing is no longer celebrated, and no especial note of it is made in a form to reach the people at large.

Not long after the original introduction of the telegraph, inventive effort had produced extensions and improvements, such that there came into existence the printing telegraph. As applied to stock reporting this is in part embodied in the instrument familiarly called the "ticker," which rolls off the "tape" and is the bulwark of the broker on the "street." The fire-alarm system came also, and is said to have been originally suggested by Rev. Dr. Channing, of Boston, to Prof. Moses G. Farmer, who gave the idea a practical basis which led to its adoption.

Train signalling followed as a natural development of telegraphic work, as did also electric clocks, time telegraphs, burglar alarms, etc.

In order to increase the capacity of existing telegraph lines came the duplex, quadruplex, and multiplex systems, which have done good service in permitting two or more messages to be simultaneously sent over a single wire, and so lessening the cost of transmission.

Before 1876 the telegraph and signalling systems referred to constituted the only large or extended application of electricity to the service of man. We should not, however, lose sight of the fact that there was indeed another application of the subtle power which had attained a considerable importance, but which from its nature did not so directly appeal to the public as did the telegraph. It had been known from very early in the century that currents of electricity could, under favorable conditions, effect chemical decompositions, deposit metals from their compounds in solution, and even disclose the existence of metals before unknown; as in the instance of the discovery, by Sir Humphrey Davy, of the alkali metals, potassium and sodium by passing a strong current from a large battery through pieces of potash and soda. A direct outcome of the chemical power of the current was, then, the art of electroplating and its kindred art of electrotyping, which came into existence along with the telegraph and has become by this time a valuable and indispensable adjunct to many industries. Meanwhile the foundations were being quietly laid in the laboratories by a comparatively small number of scientific workers, for many of those grander and larger developments in industrial electricity which were soon to take the world almost by storm.

Faraday in 1831 had made the very important discovery that electric currents were produced by the movement of conductors in the field of a magnet, a discovery which filled a gap in the relations of electric currents to magnetism and, as it were, laid the last foundation-stone of the science of electro-magnetism, for it was shown that not only could electric currents produce magnetism in iron or steel, or cause motion of magnets, but also that magnets themselves could produce currents of electricity in wires or conductors moving near them. It was this latter principle which,

when applied, gave us the dynamo-electric machine, the development of which has been carried on in the past ten or fifteen years to a state of almost perfection. In one of his early experiments Faraday revolved a sheet copper disc between the poles of a large magnet, and by a pair of wires, one of which touched the axis, and the other the edge of the revolving disc, he obtained a feeble current sufficient to deflect a magnetic needle. He thus had a simple dynamo electric machine, or generator of electric currents from power. Contrast this with the machines of the present day, in which currents are produced representing the expenditure of thousands of horsepower, and in which more than ninety-five per cent. of the applied power is converted into electric energy capable of use for lighting, heating, motive power transmission, etc.

The year 1876 is a memorable year. With it came the announcement of the invention by Alexander Graham Bell of an electric instrument for the transmission of speech by electricity over a line wire. This announcement was made during some of the early demonstrations of the working of that wonderful instrument, the telephone, which trials took place a short time after the opening of the Centennial Exhibition in Philadelphia, whither Professor Bell had gone from Boston to bring his new discovery before the scientists. That the instrument did in fact transmit speech was at once proclaimed on unquestioned authority. A widespread interest was at once aroused in this new wonder. The telephone had come into existence; no less a marvel in its simplicity than in its capacity to take up and convey all the delicate tones of the voice to great distances. As is usual in such cases, long prior to the real existence of the speaking telephone, there had appeared certain vague suggestions of the possible production of some such instrument, but to Bell belongs the credit of the actual discovery of the true talking telephone.

The effect of the discovery of the telephone was at once to increase the interest of the public in electrical matters and to imbue the thought of the age with a sense of the possibility of other great achievements in electric application. The telephone may almost be said to have created among thinking people generally an expectancy receptive to all announcements of further discoveries or newer applications of electricity to the wants of man. Probably for these reasons the introduction of the telephone was quickly followed by dynamo machines applied to furnish electricity to arc lamps for lighting large spaces, and many improvements in the construction of the machinery and apparatus were made in a comparatively short period. It is true that long before the telephone became a reality what are known as single arc lamp circuits had been run on a limited scale by current from batteries or even from dynamos driven by power. But the light so produced was costly and its application limited on account of the fact that each arc light required a separate generator and a separate circuit. Sir Humphrey Davy, in the first decade of the present century, discovered the electric arc or "arch," as it was sometimes called. He had at his command a large and powerful battery, and upon completing its circuit through two pieces of hard carbon or charcoal and afterwards drawing them apart horizontally he noticed that an arch of flame continued to join the two, and that a light of exceeding brilliancy was emitted by the carbons. A number of years elapsed after Davy's experiment before any attempts at utilizing the light of the arc in an arc lamp were made.

But it was the production of several arc lights from a single dynamo-electric generator and the regulation of its current in accordance with the number of lights in use, together with many improvements effected in the arc lamps themselves during the years 1878, 1879, and 1880, that rendered practical the employment of arc lights

on a large scale as in the lighting of streets and stores from a central station. There followed at once a growth of arc-lighting enterprises which has steadily proceeded until now the number of arc lights in use in the United States probably approaches one-half a million. And yet only twenty years ago, at the Centennial Exhibition in Philadelphia, no arc lights were in regular use, and the whole industry was represented by two or three single arc-light dynamos from which a light was occasionally run.

It is instructive to note here that one of the influences which operated to attract public notice to the arc light was the exhibition of the Jablochkoff candle at Paris in 1878 and its successful employment there in lighting the Avenue de l'Opera. The Jablochkoff "electric candle," as it was called, was expected to make electricity at once generally applicable as a lighting agent. Nothing could be simpler. Instead of placing in the known form of arc lamps, two carbons in line point to point, and employing more or less complicated and uncertain means for separating them to form an arc and to feed them as they were consumed, in the "candle" they were laid alongside each other, with a thin layer of plaster-of-paris or kaolin to separate them. The arc, once started at one end of this double carbon, burned them both away together, while the insulating cement between them kept them at a fixed distance apart. This was apparently a very pretty and ingenious solution of a problem which before had required cumbersome and expensive lamp mechanism to solve. The electric candle was received in Paris and elsewhere with great enthusiasm; great exploiting companies were started.

Soon, however, it was found that the "candle," like so many other captivating ideas, though brilliant, was not altogether practical. To make the candles themselves properly was found to be a delicate and expensive operation. Each candle would last only a little over one hour, so that for nine hours' continuous lighting six candles were required to be consumed. These six had to be mounted in a single globe, and required to be provided with mechanism to light one after the other, while each unconsumed candle awaiting its turn cast a shadow on the globe. The light itself was purple and irregular. At present it would be difficult to find a single installation making use of the candle of Jablochkoff. It remains as a memory connected with days of anticipation without corresponding realization.

At the time that the electric candle was dazzling Paris quiet work was being carried on in perfecting the older types of arc light, and rendering practical the working of several such lights from a single dynamo generator. To Mr. Chas. F. Brush, of Cleveland, Ohio, belongs the credit of having first worked out a thoroughly practical system of lighting by arc lamps in a series on one wire. In such a system the electric current from the dynamo passes to and through the lamps successively up to the full number which may be in use, and returns to the dynamo, so completing its circuit. At first four, then eight, sixteen, forty, eighty, and now a number up to one hundred and fifty arc lights are sustained from a single dynamo on a single circuit in series. The dynamos are located generally in a station where steam-engine power may be cheaply produced. The pioneer systems of arc lighting in this country were the Brush, the Weston and the Thomson-Houston, and a large majority of the "series" arc lights now in use are operated under the Brush and Thomson-Houston systems. The lighting of streets and stores in cities and towns was, for years after 1879, done exclusively by the series plan, of which the particular systems mentioned are examples, each possessing its own distinguishing features embodied in the arc lamps, the dynamos and the regulating mechanism employed. Within the past few years, however, very many arc lamps have been arranged to

take their current from the low-pressure mains also employed in serving incandescent lamps. Owing to the great extension of the incandescent system of supply in the larger cities, this addition of arc lights has attained considerable success.

Take, for example, the Edison Illuminating Company in Boston, possessing as it does, many miles of underground conductors, called mains, and feeders, traversing each important thoroughfare and connected with a huge generating plant at the water front, where coal can be easily and cheaply delivered and steam power for driving the massive machines obtained at a minimum of cost, it is easy to see that if arc lights can be worked from such mains in connection with the general business of lighting by incandescent lamps and supply of electricity for power, the field of their application is wide. Furthermore, by the recent practice of enclosing the hot carbons and the arc in an almost air-tight glass chamber, the frequent renewal of carbons is unnecessary, while the steadiness of the light is assured, as the glass surrounding the arc prevents combustion of the carbon to a great extent, and checks disturbing drafts of air.

The "enclosed" arc is then another step in advance, and its possibility is dependent on the use of very pure carbons which will not give out ash deposits to obscure the light passing through the glass which surrounds the arc. Until within a few years the carbons used were not pure enough for this use, and though the merits of the enclosed arc were well enough understood, it was impracticable for use without the proper carbons.

Scarcely had arc lighting become known as a commercial reality before the announcement was made of the discovery by Mr. Edison of the small electric lamp, now called the incandescent lamp. It was the outcome of painstaking effort to secure a small lamp, giving about the light of a gas burner and demanding but a small amount of electrical energy to work it. After much experimenting with the metal platinum as a substance to be heated and rendered luminous by the electric current, it was found to be unsuitable for the purpose, and Edison turned his attention to carbon as the proper incandescing substance. He formed it into thin strips or "filaments," which were mounted on platinum wires sealed into the glass of small bulbs, which were then exhausted of air in the most perfect manner possible. It was found that in an excellent vacuum, or one in which, for example, no more than $\frac{1}{100000}$ of the air or gas originally within the bulb remained, the carbon strip or filament, though quite frail would, without disintegration, stand heating by a current to a temperature so high as to make it an effective source of light.

The methods of manufacture of the lamps, at first crude, were, in the hands of many able workers, gradually improved, and the cost of the lamps at the same time so reduced that at the present time lamps of the first quality may be purchased for about twenty cents each. The story of the development of the incandescent lamp and its improvement up to the high standard of excellence now attained is too long to repeat here, but is a most interesting one to the scientist and engineer.

To digress a moment, it is curious to note that the peculiarly infusible element carbon bears a very close relation to most of our methods of producing artificial light. The light of the candle or torch is emitted from the innumerable particles of soot or carbon suspended in the flame before they obtain oxygen enough to consume them. The soot particles are so hot that they radiate light. The same is true of the oil-lamp flame, and of the gas flame. In the arc lamp the hot ends of the carbon rods used radiate nearly all the intense light of the arc. Lastly, in the incandescent lamp, the fine hair-like filament of carbon heated by the current passing through it and kept from burning by the exclusion of oxygen, continues for hundreds of hours

to glow or give out light without disintegrating. No other substance has yet been found which can be substituted for carbon in either the arc or incandescent lamp. Curiously, also, carbon plays an equally important role in telephony, for no substitute for it has been found which can with equal success be used in telephone transmitters, which are based on the contact of carbon pieces. In electric railway work also, we again find that carbon still plays a different though no less important part in rendering such work practicable; no adequate substitute for the carbon block called a "brush," applied to the commutator of the revolving part of a railway motor, having been found. Carbon, it will be thus seen, occupies a unique place among the known elements.

After the invention of the incandescent lamp itself, there was an enormous amount of work to be done in applying it to general lighting. Special dynamos had to be invented and constructed for the work, novel switches were needed for connecting and disconnecting circuits, also meters for measuring consumption; safety cut-offs must be devised for preventing over-heating of wires in case of short circuits; electroliers or fixtures to support lamps must be designed; and, lastly, a complete system of mains to be placed underground, with man-holes, junction-boxes, etc., etc., must be arranged. All of this required a vast amount of work, the exercise of high skill and inventive talent in its execution.

Besides the electrical problems there were involved mechanical problems, such as the maintenance of absolute steady power, which was necessary to the steadiness of the lights dependent thereon. The steam engine was even remodeled and advanced toward perfection farther in ten years of electric work than it had under the necessities of fifty years preceding. The earliest city plant embodying all the characteristics of the standard system known as the "Edison three-wire low tension" for incandescent lighting was installed in Brockton, Mass., in 1883.

Here were underground mains, leading from the dynamos in the station to the houses or stores of the consumers throughout the district supplied; lamps, measuring instruments and all the necessary adjuncts of such a plant.

An earlier station plant was installed previously in the "Pearl Street station" in New York city, but was far less perfect in many details and was run on the two-wire plan, now practically obsolete for station work. There are now in operation in most of our large cities, such as New York, Boston, Brooklyn, Philadelphia, Chicago, etc., gigantic stations with their miles of underground conductors, following closely the plan of the Brockton plant, extended, improved and developed in various ways.

Not long after the establishment of the earlier of such incandescent systems, electric motors of moderate power began to be used, and were fed by connection to the lighting mains. They were employed for driving ventilating fans and for running light machinery. It had long been known that a current of electricity sent through a properly constructed motor would develop power efficiently, and it had equally been known that all dynamo machines which as driven by power gave out electricity, were reversible in function; that is, they could convert electrical energy back to mechanical power. Only a small loss need be experienced in making these transformations, and therefore the transference or transmission of power by electricity became known as not only flexible and convenient, but also efficient and economical. A well-constructed dynamo of modern type will, out of every hundred horse-power used in driving it, give out the equivalent of about 94 to 95 horse-power as electric current energy on a line, and this is what is meant by an efficiency of conversion of 94 to 95 per cent. The five or six per cent. of loss depends on friction of bearings,

air resistance to the motion of the revolving part, magnetic waste, and unavoidable electric resistance in the copper wire or conductors partly composing the machine. Few conversions of power into its various forms can be made with an efficiency at all approaching that of electric conversion. The electric motor is an equally perfect machine, and can yield an equal percentage in mechanical power in exchange for the electrical energy delivered to it by the line. It is not to be wondered at that, inasmuch as electric power is the ideal as to controllability, ease of stopping, starting, reversing, etc., that it is rapidly becoming almost the sole means for power distribution, displacing other motors in running elevators, ventilating fans, working pumps in isolated places, for printing presses, and in general for supplying motive power to all sorts of machinery within reach of the electric line supply.

The extended use of the electric motors in cities is advantageous to the electric supply station, and tends to diminish the cost of electricity for lighting. It can easily be comprehended that a considerable fraction of the cost of producing and supplying electricity is chargeable to interest on the capital invested in buildings, machinery and distributing mains, and to wear and tear and depreciation of the same. This portion of the cost is nearly constant, whether the plant be in use one hour or twenty hours in the day at its full load or capacity. The full lighting load of an electric station covers but a short period in the evening of each day. At other times the consumption for lighting is far below the capacity of the plant, and during the hours of daylight is usually but a small percentage of the full load. On the other hand, the power demanded for working electric motors may be continuous for quite a number of hours during the active business day, thus providing that at least a portion of the plant shall be kept in service instead of remaining idle. The problem then is to increase the day load, and if possible take care of a large output for lighting during the short time each day when the load is heaviest. We are in this case brought face to face with the problem of electric storage; for it has for years been clearly recognized by electrical engineers that the ability to effectively store up a surplus of electric energy produced or producible at one time of day and to use the stored energy to supply the excess consumption at another time when the greatest demand takes place, would be a very important step in economy. It is not, therefore, surprising that a very great amount of time and effort, together with large expenditures of money, have been devoted to the production of storage batteries or accumulators of electric energy. With an effective storage system there was also the manifest applicability to the saving of waste power, and to the working of electric motors independently of lines connecting them to a generating station. An electric street car carrying along with it storage batteries for furnishing current to the motors, would, if successful, require no trolley lines, conduits or other means of continuous supply of current, and would therefore be valuable for city work. But there are difficulties which operate disastrously to prevent such a use of storage batteries.

The result of strenuous efforts in the development of electric storage, carried on during the past fifteen years has, it may be said, placed the recent structures far in advance of the older forms of battery, though the principle of operation is the same as that originally used by Brush and Faure in 1882.

The great objection still remains that the batteries are heavy and cumbersome, liable to injury or destruction unless carefully inspected or looked after, and are not as efficient as might reasonably be demanded. Nevertheless, used with care, a properly built storage battery is capable of satisfying many of the needs of the engineer, and it is becoming common to employ a considerable storage plant in con-

nection with the machinery of a large electric station, the battery being used solely for the purpose of enabling the load on the machinery to be kept more uniform. Inasmuch as in this case the stored electricity of the battery helps out the supply when the load is at its greatest, less of boilers, engines, and dynamos are needed for service, and what machinery is used to generate the electric current is more efficiently worked. During the day a portion of the plant is kept in action to charge the batteries. After midnight the batteries may alone supply the small load of lights then burning. Several years ago a large set of storage batteries was introduced into the station of the Edison Illuminating Company, of Boston, for the purposes above referred to, and the Boston station was the first of the large city plants in the United States to so supplement its machinery.

Thus far the fate which has attended all efforts to employ storage batteries in traction work as in supplying current to motors of a street car, has been disastrous. There exists in this connection only a record of failure after failure. No doubt has ever existed as to the desirability of possessing a truly successful storage battery car or vehicle, but the ability to run with apparent success for a moderate time does not mark the system as commercially valuable. Electric launches carrying storage batteries as a source of current supply for the motor which drives them have been used with considerable success, but the conditions of traction work are different from and far more severe than those of boat propulsion. It has been found that the wear and tear of the batteries themselves is so great as to give rise to great expense for renewals. The weight of batteries necessary to propel a street car is not less than two tons, which weight is almost, if not quite, equal to the weight of the passengers in a fully loaded car. Duplicate sets of battery are required for each car, so that one set may be undergoing the charging operation at a charging station while those on the cars are discharging in propelling the car.

These and other disadvantages have so far prevented commercial success in storage-battery cars, and the "broom-stick train," as Dr. Holmes quaintly called the trolley car, still holds its place. In order to carry current to and from the cars in the overhead trolley system, besides the trolley wire, there are required feeder lines of heavy copper cable for the purpose of connecting the trolley wires at various points to the power house, return conductors underground in addition to the track itself, which is usually made continuous by copper bands uniting the ends of contiguous rails, feeder switches, automatic circuit opening switches, lightning arresters, etc. While it is true that the overhead trolley wires are not objects of beauty in any thoroughfare, the system is practical and not inordinately expensive. In such a system of direct feeding of current from the power station to the cars, the motors on the latter may exert enormous effort in climbing heavy grades or overcoming abnormal friction for a time without difficulty, while the relief of load under other conditions, as when cars are at the same time descending grades, keeps up an even average drain of power from the power station. A few car lines are at present in operation in which a slotted conduit in the street contains the insulated feeding conductor, against which slides a "plow" carried by the car and projecting downward through the conduit slot, which plow is connected to the electric motors upon the car for the delivery of current thereto.

The service demanded of electric motors for car propulsion is exceptionally severe; they must stand enormous strains and be unaffected by the dust and dirt of the street, and maintain their insulation so as to confine the electric current to its proper circuit, in spite of wet tracks, during rain or snow. Scarcely any piece of machinery has to work under harder conditions. In consequence of this, in the

early years of electric tram-cars, the repair account was very high, and the breakdowns frequent. But by the gradual process of curing weaknesses and eliminating defects, together with the introduction of new methods of construction and control of current, the degree of reliability attained is remarkable, while the durability has been proportionately increased.

In the early days of electric street-car work, much apprehension arose, owing to the possibility of great danger to water and gas pipes underground by the current returning not only along the rails, but also by the earth and pipes as well. Whenever an electric current leaves a metal object, as a pipe, to traverse the ground around it, the pipe is said to be positive to the ground, and electrolysis or corrosion occurs by virtue of the chemical action of the current. Likewise when a current leaves the ground to enter a metal pipe, the tendency is to prevent corrosion or arrest such oxidation as may be naturally going on by moisture and air.

It would be out of place here to describe in what ways these principles have been utilized in guarding against electrolysis, but it may be said that ample remedies have been in the hands of engineers to meet or prevent difficulties of the kind.

The first extended system of street railways to be put upon an electrical basis was that of the West End Company, in Boston. Beginning work in 1888, with a few trial cars on its Allston and Cambridge lines, the system was soon thereafter extended to include nearly all the tracks in the city. The pluck and sagacity of the Company's president at the time, Mr. Henry M. Whitney, who had been closely watching the progress of the work which was being done in electric traction, led to the change from horses to electric power, and in 1890 the larger portion of the horse-car system had been converted into an electric system.

The central power house of the West End Company, which is located on Albany street, is probably as large as any in existence, its capacity being about 15,000 horse-power. It is supplemented by several other large stations supplying power in the outlying districts around Boston.

Since the equipment of the Boston lines, which followed immediately upon the work done by the late Chas. J. Van de Poele, and also upon the demonstration made by F. J. Sprague, in Richmond, Va., the growth of the application of electric power to street cars has been almost phenomenal. At first in the United States, and more recently in several countries of the Old World, the electric car has found favor.

There is no need here to discourse upon the merits of electric traction as compared with the use of horses; they are too evident to need enumeration. The example set in Boston by the West End Street Railway Company gave the start to a great and important industry. Not only do we find that electricity has supplanted other power in the propulsion of street cars, but also that numerous new installations have been made, connecting adjoining towns, and that many instances of electric haulage in mines, mills and manufactories of various kinds exist, and are used to transport materials or products from one part of the works to the other. We find also that electric locomotives are in use to draw trains in tunnels and underground ways, as in London. At the present time extensive preparations are being made in several large cities, including Boston, for electric transportation in subways or tunnels under streets or buildings. As an instance of the capabilities of electric traction for meeting the heaviest calls, we may mention the locomotives furnished by the General Electric Company to the Baltimore and Ohio Railroad for its tunnel service at Baltimore. One of these ponderous machines weighs 96 tons, and surpasses in actual hauling power the heaviest and most powerful steam locomotive engines. The motors are capable of exerting with ease 1,500 to 2,000 horse-power, and have,

on testing, shown the exertion of an unprecedented "drawbar pull," or tractive force.

In these days of rapid transit we need to consider not only the car or vehicle moving in more or less horizontal tracks, but also others the tracks for which are vertical—vertical railways, so to speak. These are the elevators, many of which are now run electrically with entire success, owing to the advantages which have made electricity so useful in the distribution of power. The speeds attained in elevator work are not far below those of ordinary surface roads, while the frequency and accuracy of the stops made are required to be very much greater.

Within the past few years the utilization of water-power, the production of electric currents by such power, and their transmission over long lines of wire to distances of ten to thirty miles, has attracted much attention. A large plant at Portland, Oregon, one of the first to be established in this country, covers a distance of thirteen miles. An immense plant has been established at Niagara Falls, whence power is sent to Buffalo, and will probably soon reach more distant points. In fact, many thousands of horse-power are now being transmitted in the various electric transmission plants, and other installations are soon to be in operation. Wherever fuel is comparatively dear such installations will probably be made if cheap water-power is available within fifty miles.

Some of the more recent developments in the electrical field concern the chemical powers of the current, and also its heating effects. Thus we find electric plants in operation for refining copper and other metals on a large scale by electrolysis; *i. e.*, solution of the crude metal and deposition in its purified state, as in plating by electro-metallurgic baths. We find electric machinery in operation also for the manufacture of chemicals, such as soda, chlorine, bleaching compounds, chlorate of potassium, etc.

At Niagara there exist extensive works for reducing aluminum metal from minerals containing it. The process may be called hot plating, or electrolysis of fused compounds containing the oxide of aluminum dissolved. The growing use of aluminum, both as a metal and as an admixture with other metals and alloys, is largely owing to the cheapening of its production by electricity. Especially is the comparatively cheap and unfailing power of Niagara adapted to such work, and already there have been attracted to its vicinity a number of enterprises dependent more or less on abundant electric energy for their operations. As an instance of this is the Carborundum Works, in which a mixture of sand, carbon and a little salt is subjected to heavy heating currents in a suitable electric furnace, whereby a new product is formed not found in nature, and possessing the hardness of the diamond. This is carborundum, or silicon carbide, the crystals of which form a powerful abrasive substance rivalling black diamond powder and relatively very cheap.

The electric welding of metals is now carried on extensively by special machinery in connection with a variety of manufactures, and many operations of uniting metals which were formerly difficult, or even impossible by other means, have become easy and simple. New manufactures have arisen based upon the capabilities of electric welding. It has, in fact, made practical the commercial development of other inventions and processes. A good example of this is found in the rubber-tired wheels for carriages and wagons, the rubber of which is secured by steel wires passing through it, which are electrically welded into continuous bands or hoops embedded in the rubber around the wheel. If our space allowed, there might be added to the foregoing brief references to recently developed electric industries, others relating to minor arts which have been developed by electrical

methods. Many of these will doubtless be more largely used in the future, and particularly those which have their use restricted on account of a lack of general extension of electric supply service. Thus the appliances for the economical employment of electric heat in cooking operations have now reached a considerable degree of perfection, but as yet have had but a limited application. The employment of electricity for general heating or warming of buildings is, as yet, far too expensive to permit of extension, but in street cars electric heating has already become quite common, and has served to greatly enhance the comfort of passengers in the winter season.

It is now about eighteen years since the first central station supplying electricity for lighting was established. At the present time there are probably in existence in the United States, nearly three thousand electric light-supply stations, representing a capital of over three hundred millions of dollars. Two hundred millions more would be represented by more than eight thousand isolated plants. The incandescent lamps in use are numbered by the millions, and the arc lamps by the hundreds of thousands. The carbons used in arc lamps annually in this country alone equal two hundred millions. The number of stationary electric motors in use reaches a large figure, and they are of powers ranging from about one-tenth of a horse-power to several hundreds. The period of true growth in electric railways is less than ten years, but in that time about one thousand electric roads have been equipped, and represent probably more than twelve thousand miles of track with thirty thousand cars, and not far from one thousand millions of invested capital.

To supply the electrical equipment for the great growth of electric lighting and railway enterprises has, of course, demanded large manufacturing facilities; and not alone for the electrical equipment proper, but for the boilers, engines, steam pipes, belting, rails, trucks, poles, conduits for wires, car bodies, etc.

The electric manufacturing chiefly concerns us here, for it represents work new to the world, development in a new field which, in spite of its newness, grew in a very few years to such an extent as to demand the labor of thousands of skilled workmen and engineers, guided and assisted by men of scientific and technical training who possessed originality, resourcefulness and indomitable perseverance. The new field of work came to demand workshops and factories containing, at the same time, the most powerful, ponderous machinery for its larger productions, and also appliances as delicate as the works of a watch. It demanded a store of materials for its purposes, comprising those possessing the widest differences in their properties, as glass, steel, paper, cast-iron, silk, sheet-iron, mica, copper, porcelain, cotton, brass, carbon, platinum, cardboard, lead, silver, felt, cord, leather, wood, slate, oil, shellac, tape, agate, asbestos, sapphire, etc., etc. For the proper working of the materials there was needed an extraordinary equipment in tools, often specially designed for the particular material used or the piece to be produced. Castings were demanded of solid steel, thirty thousand pounds or more in weight; while, on the other hand, delicate pieces weighing not as much as a grain had to be made. In no other industry is there such a diversity of materials used, or such a variation in size and nature of product. It was perhaps natural that in New England, the home of manufacturing industry, the utilization of electric lighting and power should have proceeded at a relatively more rapid rate than in other sections of the United States, excepting, perhaps, New York city. Central electric lighting stations and telephone exchanges marked this progress, followed by the establishment of the railway power stations and electric car lines. New England also became the focus of some of the chief exploiting and manufacturing organizations, or "parent" companies, as they are sometimes called.

Long before the inception of any of the larger electric enterprises of to-day we find that Wallace & Sons, of Ansonia, Connecticut, were producing high grades of insulated wire, and were building dynamos for plating and arc lighting. In fact, the only American exhibit of dynamos for lighting at the Centennial Exhibition of 1876 was made by the Ansonia firm, there being only one foreign exhibitor.

In 1880 the works of the American Electric Company were established at New Britain, Conn. This company, on its removal to Lynn, Mass., in 1883, became The Thomson-Houston Electric Company, with its business headquarters in Boston and its factories in Lynn. Chas. F. Brush, in Cleveland, with the well-known Brush Electric Company, was working assiduously in the arc-lighting field. Edison, in Menlo Park, was developing his incandescent lighting system. Maxim, Weston and others, were at the head of companies in New York and were beginning the development of active business in dynamos, lamps, and other appurtenances of an electric-lighting plant.

Meanwhile, in the telephone field, the American Bell Telephone Company had been founded in Boston, being based upon the broad patents of Prof. Alexander Graham Bell for the art of telephony.

The inventive genius of Bell had, in 1876, produced an instrument which would convey speech, and he called it the telephone, but some time elapsed before its marvelous value and practical utility were appreciated by that portion of the public who were able to furnish the capital for business in the application of the telephone.

It is even said that certain of Mr. Bell's assistants and mechanics were paid in shares in his enterprise, receiving them under protest in lieu of money, only to find themselves afterward in comparative affluence by the rapid increase in the market value of their holdings.

Soon the business public were awakened to the situation and the Bell enterprise received ample support from capital, though, of course, the present enormous extension of its business could not have been anticipated.

"American Bell," as the company's name is abbreviated, is an enterprise which from the first has steadily grown, and its extension has been marked by every element of success. One of the chief bulwarks of such an organization has been its property in patents, beginning with the foundation patents of Bell and including patents on every detail of instruments, lines, and exchange systems.

Naturally, strong opposing interests have forced litigation upon the company, and frequently it has had to press for its rights against infringers. Through all these conflicts its success has been remarkable. No important decisions have been rendered by the courts against the patents of the company. The success was doubtless due, not only to the real novelty in the inventions, but also to the wisdom and energy of the management and its legal counsel. The original Bell patent covering speech transmission by electricity was attacked on almost every ground or pretext, ordinary or extraordinary; anticipation by Philip Reiss, of Germany; anticipation by such claimants as Drawbaugh; fraud in the Patent Office when granting the patent, etc.; but the patent position became stronger than ever after each conflict.

Preposterous or even fraudulent as the claims of Drawbaugh might from the first seem from the standpoint of a scientific and technically informed onlooker, yet it required years of effort and enormous expenditure of money in litigation before the famous Drawbaugh case was finally disposed of. During the progress of the repeated attempts to cast a cloud upon its title to the art of telephony the business of the Bell Company grew enormously, its exchanges were to be found everywhere, the number of telephone subscribers went on increasing; the wires and circuits multi-

plied to such an extent in cities that it became necessary to collect them together in cables and place them under ground in conduits. While this was going on the company was at work in establishing and extending its long-distance service, which to-day covers distances such as that between Boston and Chicago, by wire, 1,200 miles. In fact, by recent extensions, conversation may be carried on between points 1,500 miles distant.

Gradually the old single-wire circuits with "earth returns" are being supplanted by "metallic circuits." In this case the subscriber's line is virtually a double wire to the exchange, an outgoing and a return conductor. This substitution has been of the greatest value in increasing the promptness, reliability and effectiveness of telephone service, since it obviates, to a large extent, those interferences by cross-talk and induction from other electric lines, to which the telephone, on account of its delicacy as an instrument, is sensitive.

So great has been the extension of the telephone business in the United States that scarcely a town of 5,000 inhabitants is now without its telephone exchange. This exchange not only permits communication between its own subscribers, but, by means of the long-distance connections, conversations may in general be carried on from town to town even when hundreds of miles apart. It is estimated that about 500,000 miles of wire are in use for telephonic service in this country, the number of telephones being probably near 600,000. Over these lines and with these instruments probably 700,000,000 conversations are annually conveyed. These figures give some idea of the great service afforded by the telephone in inter-communication. The work of the exchanges demands over 10,000 operatives. As an example of the rapid progress which is taking place regardless of the great expenditure demanded, it may be stated that upwards of 150,000 miles of wire have been laid in underground conduits during the past five or six years. This means a vast amount of work done, and adds greatly to the permanent and satisfactory character of the service to the public. It removes the poles and wire-supporting structures from the streets and from the roofs of buildings in a city, and makes damage or total interruption by severe storms an impossibility. Liability of contact with other electric wires conveying powerful currents is also prevented.

Not the least important feature of the work of the "American Bell" has been the establishment and extension of a most remarkable system of long-distance lines, which comprises about 60,000 miles of hard-drawn copper wire connecting distant cities and towns, and which system has grown up within a few years. To obtain some idea of the magnitude of these undertakings and of the outlay involved, it will only be necessary to mention one item alone, namely, the copper wire used for a single circuit covering the distance between Boston and Chicago. In order to secure proper conduction of the necessarily very feeble currents, the wire must be of large size, as upon its diameter or thickness depends the ease of passage of currents of electricity in it. For this reason wire of about one-sixth of an inch in diameter is needed, each mile of which weighs 435 pounds. This gives a total of 1,044,000 pounds of copper for the circuit mentioned. If the business demands that several circuits be established between the two cities, it is seen that the amount of copper must be multiplied by the number of circuits.

The position of the Bell Company has been secured by the able and judicious management of its officers and directors. Mr. John E. Hudson, its president, has been identified with its interests for many years. The capital of the company is \$21,500,000; and, being the parent organization, it has subsidiary to it numerous local companies owning and operating exchanges under its system of patents, and,

in addition, the long-distance company. The development of the telephone, considered from the standpoint of an instrument for speech transmission, has gone on steadily. Beginning with the simple magneto instruments of Bell, we find the carbon transmitters of Blake and of Hunnings taking their place, and in the long-distance instruments of to-day there are embodied the latest results of continued experimentation and scientific study. It is not at all likely that in the future any other invention will be made which will supplant the telephone, and it is no more likely that any revolution in methods of operation or construction of instruments will affect the standing which the Bell organization has attained at the head of the business of telephonic communication.

Another New England enterprise, based upon electrical application, but whose field of work concerned the use of heavy currents, thousands of times greater than the strongest telephonic currents, was the Thomson-Houston Electric Company, the influence of which organization upon the extension of electric lighting and power applications has been very great. In 1892 it was consolidated with the Edison General Electric Company into what is now the General Electric Company. The Thomson-Houston Company was, before this consolidation, a distinctly New England enterprise, with large factories at Lynn, Mass., and its main offices in Boston, and with innumerable interests in local lighting and power companies and stations throughout the country. It had secured control of most of the important manufacturing companies outside of the Edison General and Westinghouse, and among those controlled or owned were the Brush Electric, of Cleveland, Ohio; the Excelsior, of New York; and the Schuyler, of Connecticut, and the Fort Wayne, Ind., companies. The original start of the enterprise was in Philadelphia in 1879, where some of the earlier apparatus of the Thomson-Houston type was built, but in 1880 a company called the American Electric of Connecticut was organized at New Britain, in that state, and the works of the company established there, and were removed to Lynn in 1883. The present writer was electrician of the company and in connection with it had been carrying on the work of invention, experiment and patenting for many years past. In 1882 parties in the interest of the Brush Company, at Cleveland, held a majority of the stock of its younger New Britain rival, possibly with the idea of cutting off a competitor. Finding this step impracticable the interests of the Brush Company were sold in the same year to a syndicate representing chiefly Lynn capital.

Messrs. Henry A. Pevear and S. A. Barton, of Lynn, had happened to visit New Britain with the idea of purchasing apparatus for a local lighting company in Lynn. Their visit resulted in their considering the larger project of buying the control held by the Brush Company and carrying on the manufacture of electrical machinery. The outcome was the removal to a new factory in Lynn in the fall of 1883. The name of the company was changed to The Thomson-Houston Electric Company, and it was chartered by the Connecticut Legislature. Under the energetic management, which has since been a characteristic of the enterprise, the first factory, called factory A, was soon found to be inadequate, and the plant was soon doubled in capacity by the addition of factory B, followed in a year or two by C, D, etc., until the list extended to the letter L, leaving out the extensive plant now known as the River Works on Sangus River, near Lynn, and chiefly devoted to steel and iron foundries, sheet-iron stamping machinery, wood-working and pattern-making.

The original business of the Thomson-Houston Company was almost solely that of manufacturing and establishing arc-lighting machinery in accordance with the patented Thomson-Houston system, but was soon extended to include incandescent

lamps and machinery, electric motors and other work. Numerous inventions and improvements in all departments of electric work were made and put into practice in its works, and its ownership of valuable patents steadily increased.

The rival companies which it secured not only increased its influence, but many of them possessed valuable inventions useful to the company. It secured the patents of the late Chas. J. Van de Poele on electric railways, and its officers were constantly alert in strengthening the company in every department of its work. That so much was done is largely due to the indomitable energy and foresightedness of its managing director, Mr. Chas. A. Coffin, of Lynn, who is now the president of the General Electric Company. He early became interested in the business of the Thomson-Houston Company and was one of the original Lynn syndicate. He took a most active part in shaping the affairs and policy of the enterprise which, with Mr. Henry A. Pevear as its president, showed rapid progress. Mr. Coffin had himself been a prominent manufacturer of shoes in Lynn, but in the new field of work his business talent, or rather genius, found a wider scope. Deeply interested in the new enterprise and believing most fully in the great future of electric application, he was untiring, unremitting in his efforts to place the Thomson-Houston Company at the head of the electrical business in the country. The position taken by the company in the electric railway field alone was one of the results of these endeavors.

Up to the year 1887 but little had been done in the adaptation of electric power to street railways, but many thousands of arc lights had been established in the various towns and cities, chiefly under the Brush and Thomson-Houston systems. The larger part of the incandescent lighting business had naturally been done by the Edison General Company of New York, with the productions of its Schenectady works. The Westinghouse Company was just beginning its active career in Pittsburg, and its business was almost exclusively incandescent lighting by alternating currents. The advanced position which was soon attained in the electric railway field by the Thomson-Houston Company soon after beginning work in that field, was owing to the steady improvements made in its productions. In most of the important advances it led the way. It first adopted single reduction gearing, as it is called, between the motor shaft and the axle of an electric car, a construction now universal; it was the first to make the motors of steel and in the form of a closed box; it introduced to the art the indispensable "carbon brush," as it is called, which has made the railway motor a success and removed some of the most serious difficulties in the construction of dynamos for railway power stations; it introduced and made successful what is known as the "series parallel controller," which is a device mounted on the platform of a street-car and manipulated by the motorman for starting and stopping and regulating the speed of the cars. By means of these controllers nearly one-third of the power formerly needed to propel a car was saved. The equipment of the West End System of Boston, with electric power and the successful operation of the plant had the effect of removing doubts as to the capabilities of electricity as a substitute for horses in extended railway systems, and a great growth of the business was the natural consequence. By the continued work of improvement electric railway machinery has, during the past few years, been brought to a remarkable degree of effectiveness, and its cost very greatly reduced. In scarcely any other field of mechanical progress has improvement been so rapid and the results so uniformly successful. Dynamos for generating current for railway work are now regularly built of 2000 horse-power, while only a few years ago such machines were considered large when of 100 horse-power. The first 2000 horse-power railway dynamo was constructed at the Lynn works in parts, which were put

together at the World's Fair in Chicago, in 1893, and the completed machine there used in working the Intramural Railway—the forerunner of the two elevated railways now operated by electricity in Chicago, the equipment of which roads was furnished by the General Electric Company. In each of the giant dynamos mentioned above, two castings of steel each weighing about 30,000 pounds, form the field frame, and the revolving armature is over ten feet in diameter. Many of these machines are now at work in the various power stations. Each of them is capable of supplying electric current to work upwards of three hundred electric cars. Probably a majority of the electric car motors in use have been manufactured at Lynn, and the production has often been as high as between one hundred and two hundred motors per week. They are to be found in operation in all parts of the civilized world.

When the Edison General and the Thomson-Houston Electric companies were united in 1892, under the name of the General Electric Company, a very large saving in litigation expenses was secured, and it became possible to organize the business and manufacture more perfectly. Under the presidency of Mr. Coffin, aided by an executive board composed of men of well-organized ability in the management of large enterprises, it can be said that every effort has been made to keep the productions of the company in the front rank. In spite of long business depression the position occupied by the General Electric Co. in relation to the electric industry has steadily improved and is a sufficient testimony to the ability of the business men who direct its affairs. The status of the General Company, like that of the American Bell Telephone Company, is based in a measure on the possession of foundation patents, and the number of these grants relating to important features of its apparatus is very great. Still, unlike the Bell Company, its true reliance is upon its actual manufacturing. While the possession of a few fundamental patents on telephones, could and did secure for the Bell Company its virtually perfect monopoly, the diversity of products and the numerous kinds of work undertaken by the General Electric naturally resulted in limiting to a considerable extent the effect of patents to some of its special departments. It is easy to understand that where the range of work is great, as exemplified in arc lighting, incandescent lamps and systems, electric motors, railways, transmission of power, and other applications of electricity, the necessity for prosecuting numerous infringers of patents may become a very serious burden, both on account of the effort required to be diverted from other channels to be spent in litigation, and the great expense involved. Especially is this burden great when it is understood that infringers may be at the same time numerous and often irresponsible.

The Westinghouse Electric Company, of Pittsburg, has in certain fields of electric work been a rival of the larger organization, the General Electric, and until recently has been either plaintiff or defendant in numerous patent suits, involving great expenditures by both organizations, even though the outcome of the litigation was and is in such cases problematical. This uncertainty arose from the fact that certain points of doctrine in the administration of patent law had never been passed upon by the Supreme Court, and from the more important fact that the courts could hardly be expected to master in a short time subjects which had demanded years of special technical and scientific training. There are many points upon which even experts may reasonably disagree, and particularly so regarding the more complex developments of electric apparatus or theory. If the time ever comes when the courts have at their call boards or commissioners of technically trained experts of equally high character with the judges themselves, salaried and appointed in accord-

ance with character, experience and ability, the value of patents in new fields of work will be less uncertain than it is at present.

In consequence of existing conditions, an agreement was entered into quite recently between the General Electric and Westinghouse interests to cease litigation and combine the patents of the two companies, as well as to apportion the accounting of the business done under the patents. This treaty is one of great importance, and will result in a large saving to both organizations. At the same time the free use by one company of the inventions and patents of the other will secure for the public the best productions, and there will have been removed a virtual restriction of the growth of the electric industries, and the protection afforded to the user will be much more assured. Thus a measure which may be in essence the result of a purely business policy, or which may arise out of expediency, may also result in greater technical success, and lend itself to the progress of the art.

The larger electric undertakings of recent years have necessitated such extensive manufacturing plants as could not possibly exist outside of organizations with large capital. Without such companies as the General Electric, how could the construction of the gigantic electric tunnel locomotives now in use at Baltimore ever have been undertaken? The construction of an electric locomotive weighing ninety-six tons, was an entirely new problem, demanding the best engineering skill, plenty of courage and abundant means.

The Niagara power distribution and transmission could not have been carried out did not great manufacturing companies exist to furnish the apparatus and machinery required. The transmission to Buffalo of power developed at Niagara is nearing completion, and is but one instance of similar transmissions which are being undertaken in other places. At Niagara electric currents are generated at moderate pressures or potentials, by dynamos of 5000 horse-power each. This current produces, through the agency of what are called transformers, other currents by induction in another circuit, but of much higher pressure, as from 10,000 to 20,000 volts, which latter currents are conveyed by a set of copper wire lines to Buffalo. At the Buffalo end of the line the high pressure current of the line is used to reproduce, by means of the other transformers, low-pressure currents for electric car propulsion. The transformers, which are simply huge induction coils of special construction, are unique. They are the largest ever designed or made, each of them being able to work with 1250 horse-power. The larger waterfalls, which are of sufficient constancy, are being rapidly utilized as sources of power, which may, by electrical methods, be delivered to points as far distant as forty or fifty miles with but little loss.

The enormous growth of the electrical industry has led to the development of many other industries more or less dependent thereon. The steam engines, for example, as now constructed to meet the requirements of electric service, are magnificent machines, far ahead of those in existence prior to electrical stimulus calling for improvement. The arts of metal founding, steel casting, wire drawing, porcelain moulding, copper refining, mica production, asbestos working, glass blowing, insulation of fabrics, sheet-metal work, etc., have each felt the effects of electrical advance, and have reached a greater perfection as a direct consequence of electrical needs. In fact many special manufacturers have, within the past ten or fifteen years, had their origin purely to satisfy the new wants of the electrical engineer. For example, the business, the making of carbons, of rubber and lead covered cables, of special telephone and electric light cables, of pipes for wire conduits, of special rails for electric service, of special alloys having desirable electric properties, did not have occasion for existence before the period mentioned. In all this advance the greater

manufacturing facilities have brought to the eastern states a large share of the new work. The well-known inventiveness of the people has been called upon to devise means to meet the new and varied demands. There would indeed seem to be no discernible limit to the advancement now taking place, and which may follow in response to newer or more stringent demands.

Comparatively little has as yet been done in the United States in the application of electricity on a large scale in chemical operations. A pioneer plant was established a few years ago at Rumford Falls, Maine, for the manufacture of bleaching powder and soda from common salt by an electric process, and more recently at Niagara Falls a plant for making chlorate of potassium has been installed. In a sense, however, the production of aluminum and the refining of copper electrolytically are chemical operations and are now carried on upon an extended scale.

The application of electric heat in what are called electric furnaces has already been applied in the manufacture of carborundum, before referred to, and it is reasonable to regard the time as not far distant when other special products, the formation of which is dependent upon the exceedingly high temperatures obtainable in the electric furnace, may reach a commercial importance.

A series of brilliant investigations by Henri Moissan, a distinguished French chemist, has much extended our knowledge of the capabilities of electric furnaces, and has even shown how real diamonds may be made from ordinary carbon by electric heat. He endeavored to imitate the processes of nature in producing diamonds according to his understanding of them. As a result he obtained small diamonds.

A considerable degree of attention has of late been attracted to processes which have been proposed for obtaining electricity by the direct consumption of carbon in a battery somewhat resembling in action an ordinary battery, but with the carbon or fuel taking the place of zinc ordinarily consumed. The possibility of obtaining upward of 80 to 90 per cent. of the actual energy of the carbon fuel as electric energy, while a little over ten per cent. is the maximum obtainable when a steam engine is used to drive dynamos, is, of course, a very important consideration. It is as yet too early to predict the fate of some of the notable efforts which are being made in this attractive field of work.

Again, it is not unusual in these days to hear of new devices or proposals to increase the light-efficiency of lamps, that is, to secure a larger percentage of the electric energy supplied in the form of light, and much less of it in useless heat now produced in abundance. Ordinary electric lamps of either the arc or incandescent type convert the energy chiefly into heat, while only a small percentage is actually represented in the light emitted. Certain forms of vacuum tubes traversed by electric discharges, and thus made to give out light, have been put forward as the solution of this problem. Here again, however, nothing can be said except that the time has not yet arrived for a discussion of the probabilities of success with the various proposals. It is certainly to be hoped that the problem will be solved, for electric lighting would then become almost universal, and a given amount of light would be obtained from the expenditure of only a fraction of the fuel which it is now necessary to use. That the coming century will witness the accomplishment of many of the things which seem difficult, if not impossible, we may reasonably expect, judging from the past; but it is altogether unlikely that prophecies as to the particular improvement or the particular way along which the advance will be made can have any value.

In the foregoing pages the attempt has been made, imperfectly, it must be confessed, to trace the advancement in electrical applications or industries, and to point



Edwin Thomas

out the causes which have had the effect of assisting in the development which has so rapidly taken place. In this review the endeavor has been to give due value to the various factors in this great growth, not excepting the larger organizations of men and capital upon which so much of it has depended in America. The subject itself includes so many lines of progress of almost equal importance, that much that might have been said concerning several of the phases of development, and concerning the statistics of growth of each of them, could not be given place here.

The progress in electricity is world-wide, and, while it is true that in the United States, and particularly in the Eastern States, by far the greatest industrial development has been reached, yet there exist abundant signs to show that the nations of the Old World, though more conservative, are awakening rapidly to an appreciation of the benefits of electric tram-cars, as well as telephones and electric lights. The importation of American machinery, as well as methods of doing work, has had its effect, and is destined to continue to be of importance as a factor in development abroad, especially in the railway field.

The science of electricity, considered purely as a science, has kept pace with the industrial progress, and it has become a factor in education in many institutions of learning; but nevertheless the knowledge of the true nature of electricity is no greater than before. We do not yet know, nor can we guess, what electricity is. This should not cause surprise, however, for the real nature of any form of matter is no better known, nor is the true nature and cause of so familiar a force as that of gravitation a subject for any more successful study. The key to the Universe lies in the knowledge of what these forces of gravity or electricity really are. The range of man's mental vision is limited, his mind is finite, and who knows whether it be possible that his power of comprehension will not have reached its limit before touching the true foundations of these world-sustaining forces?



ELIHU THOMSON.

WE present the portrait of Prof. Elihu Thomson, and in connection therewith give a biographical sketch of that well-known electrician, of whom it may be affirmed that no one of prominence in the electrical profession more thoroughly enjoys the esteem and respect of his fellows. Prof. Thomson has already done work that will live, and his name will be handed down to posterity with those of Edison, Brush, Weston, Swan, Gramme and other founders of the modern science and industry of electric lighting. It is somewhat singular that one who had such marked success as an educator should have been able so readily to transfer his energies from the department of instruction in physical matters to that in which the most exacting conditions of practical work have to be met. There are very few men who can make this change with any degree of success. It is easy to understand the promptings which led him into the field of practical electricity as that in which he could best do his life's work.

Those who are familiar with the work of Prof. Thomson, and who believe in the principle of heredity, will not be surprised to learn that the chief family attribute on his father's side was the possession of mechanical insight and skill. Some of the members of the family were exceptional for their ability as skilled mechanics; and

the same thing is true, though to a less extent, of his connections on the mother's side. "I love a smith's shop, and anything relating to smithery," wrote Faraday once in his journal; "my father was a smith;" and here again we have a notable example of inherited tastes of the same nature. Elihu Thomson was born at Manchester, England, in 1853, his father being Scotch, and his mother English, with a French admixture two generations back. In 1858 his parents crossed the Atlantic, and settled in Philadelphia. Young Thomson had already, from his earliest remembrance, taken great interest in machinery and its operation, and liked to draw, even before the constructive or creative instinct had manifested itself. At seven he entered school in Philadelphia, and it was not long before he was ready to begin studies in the Central High School, but the age limit there being thirteen, he had to wait nearly two years. This period of enforced idleness, which, in many cases, might have had unfortunate results, was just the opportunity the boy wanted, and it shaped his career for life. He had been building models of pumps, etc., and dabbling in photography; but he happened at this time to have given him a book describing experiments in electricity, and telling how to make an electric machine with a wine bottle for a friction cylinder. He had never seen any such apparatus, nor had he then more than the usual distant acquaintance with the electric spark, as seen in the lightning: but the machine was immediately built, and its construction was followed by work on Leyden jars and other statical appliances mentioned in the simpler textbooks of those days on natural philosophy. Tobacco tinfoil, scraps of gold leaf and elder pith were great treasures, and the quest for elder bushes involved the trudging of many a weary mile into the country around Philadelphia. About the same time, too, a Morse telegraph circuit was made, complete, with instruments, batteries, etc., and the magnets were wound with wire, every inch of which was insulated by wrapping cord around the bare copper. Insulated wire he had never seen.

As can easily be understood, much was learned from all this experimenting and a passion for investigation and the acquirement of scientific knowledge became a part of his nature. He finished in 1870 his four years' course in the Central High School of Philadelphia, the people's college, graduating with high rank. His favorite studies were mathematics, drawing, chemistry and physics, in which latter study, as in chemistry, he ranked far beyond his fellow-students. During all this time he followed up with especial earnestness his electrical study and experimenting. On leaving the High School he spent about six months in an analytical laboratory in Philadelphia, testing iron ores, etc., but he was recalled to fill the place of assistant in the Chemical Department of the School. This position, which gave him charge of the chemical laboratory and apparatus, and the conduct of the instruction there, he filled until 1876, being meantime, in 1875, appointed Professor of Chemistry in the Artisans' Night School of Philadelphia, where, following a practice begun some years before, he delivered lectures on appropriate scientific topics.

What leisure he had was filled with a variety of work, such as very greatly increased his knowledge of methods of manufacture, tools, appliances and apparatus, while his chemical work gave him an exceptional acquaintance with the properties of materials and substances, enabling him in later industrial electrical work to select with certainty those materials and methods best suited to the end in view. He became interested, for example, in organ construction, and built one with four complete sets of pipes with electro-pneumatic key action. He actually made most of the zinc and wood pipes, the keys, sound-board, bellows and other parts, and in doing so acquired an intimate knowledge of the details of the noble instrument. Besides lathe work in wood and metal, he took up the grinding of lenses and specula, and

built a compound microscope entirely unaided, calculating the lenses, grinding and mounting the achromatic object glasses, eye pieces, etc. In electrical work also much was accomplished, ranging from glass-plate Holtz machines to dynamo-electric machines.

Promotion, and that speedy, was inevitable in the case of such a worker, and in 1876 Professor Thomson, only twenty-three years old, was appointed to fill the chair of chemistry and physics at the Central High School, having charge of the chemical course of two years, and of the teaching in mechanics and in the properties of solids. Prof. Edwin J. Houston had charge of the teaching in the other departments of physics.

In 1880 Prof. Thomson resigned to take the position of electrician to the American Electric Company, of Connecticut, located at New Britain. It afterward became the well-known Thomson-Houston Electric Company, which in 1892 was merged with the Edison in what is now the General Electric Company. During the professorship referred to Prof. Thomson was appointed lecturer at the Franklin Institute, in 1876-7, and gave courses on electricity, etc., that winter, as well as subsequently. All such lectures were illustrated by experiments with apparatus, often of original design and frequently of his own construction. For the course of 1876-7 he built his first practical dynamo, making patterns, winding, etc., of sufficient size to run a small arc lamp. No other such machine was available at the Institute at that time, and this contained several features afterwards found in a number of other dynamos. His genius had now struck into the right channel, and every minute that could be spared was given to experiments with dynamos and lamps. About the same time, however, certain observations on centrifugal action arrived at in teaching his classes as to the nature of centrifugal force, led him to work out, in conjunction with Professor Houston, a machine for the perfectly continuous centrifugal separation of substances of different densities. The machine, or process, was particularly applicable to cream separation from milk, and, being patented, has gone into extensive use in creameries.

Meanwhile he was elected a member of the American Philosophical Society, of which Benjamin Franklin was a chief founder. He is also a life member of the Franklin Institute of Pennsylvania, and was at one time one of its board of managers. He served in the winter of 1877-78 on a committee of the Institute to examine and report on the then existing dynamo-electric machines for electric lighting. The electrical testing was in charge of Prof. Houston and himself, and their report brought out many facts and considerations, which afterward became of great importance. He took out jointly with Prof. Houston, in 1878 and 1879, a number of electrical patents. These formed the nucleus around which the system of the American Electric Company of New Britain was built up, but before that company's organization Mr. Geo. S. Garrett, of Philadelphia, built several of the machines and lamps under license, and put the plants in operation.

Upon his going to New Britain in 1880, his joint work with Prof. Houston ceased, and the achievements of the Thomson-Houston Electric Co., in the electrical field, thereafter depended for many years on the sole efforts of Prof. Thomson and his carefully chosen assistants. Prof. Houston, it should properly be said, never had an active connection with the enterprise, though his name continued to be associated with its electrical work and business.

Prof. Thomson was not less at home among the machinery of a novel and bustling enterprise than he had been with his classes in the quieter academic surroundings of Philadelphia. He now gave his whole time to electrical work, arranging all the details of design and manufacture, and it was soon his good fortune to become associated with the enterprising management which gave the Thomson-

Houston Electric Co. a foremost rank in electrical industries, and which has won for its productions such widespread adoption in this country as well as abroad. The varied undertakings of the company in arc lighting, incandescent lighting, motor work, induction systems, etc., stand as a partial representation of Prof. Thomson's work, and upwards of 500 electrical patents have been issued to him, nearly all of which have been taken out since the old Philadelphia days. Many applications are still pending in the Patent Office, and much work naturally remains, full of promise, though not submitted to the public eye, in the private sketches, note-books, drawings, experiments and models of apparatus, that have accumulated during the past fifteen or more years of growth. His work has covered the widest field, including arc lamps and dynamos, regulators, incandescent lamps and machines, motors, storage batteries, etc. The art of electric welding, which has been found almost indispensable in a number of industries, was his invention. Nearly every electric street car in use has embodied in it one or several of his inventions, and it is needless to point to the many electric lighting stations which are practically based on his work. He has largely contributed also to the inventions required to render long-distance transmission of power feasible.

In addition to his work of invention and engineering, he has communicated many articles to the technical and scientific journals, and the demands of patent litigation have often interrupted his work for considerable periods. A paper read by him on Electric Welding before the Boston Society of Arts in 1886 appears to have been more widely copied, and in more languages, than any other scientific essay of that period.

He was decorated with the Cross of the Legion d'Honneur by the French Republic in 1889, receiving the grades of Chevalier and Officier in recognition of his services to electrical progress. This is a distinction but seldom accorded a foreigner. He was also awarded the Grand Prix at the Exposition at Paris in the same year for his exhibit of original electric apparatus and inventions.

The Paris Commission of 1890, for examination of electric meters, divided the first prize of 10,000 francs between the Thomson meter and the Aron meter, as both fulfilled the conditions of the award. At the World's Fair, 1893, the international commission of judges selected the Thomson meter as the standard with which all others were to be compared in ascertaining their merits.

Besides his membership in the Franklin Institute and American Philosophical Society, Prof. Thomson is Past-President of the American Institute of Electrical Engineers, Fellow of the American Academy of Sciences, and of the American Association for the Advancement of Science, a member of the American Chemical Society, of the Society of Arts of Boston, and has lately been elected a life member of the Institution of Civil Engineers of Great Britain. In 1890 he received the honorary degree of Master of Arts from Yale University, and later the degree of Ph. D. from Tufts College. He was appointed by the U. S. Government one of the six American delegates to the International Electrical Congress, held in Chicago in 1893. He has been for years a member of the Boston Commercial Club, a well-known representative body; and is one of the Trustees of the Peabody Academy of Science of Salem, Mass.

In 1884 he married Miss Mary L. Peck, daughter of Chas. Peck, of New Britain, Conn., and has four sons.

While Prof. Thomson has done most of his original work in the field of electrical application, he has on occasion entered other fields, and shown that his talent has no affinity with a narrow specialism, and his opinion and judgment upon questions of engineering and scientific advance in other fields are highly valued by his associates.

CHAPTER XIII.

COTTON MANUFACTURE IN NEW ENGLAND.

BY EDWARD STANWOOD.

THE BEGINNINGS OF THE INDUSTRY.



THE Pilgrim Fathers and the Puritans who followed them a few years later to our

“stern and rock-bound coast”

never indulged a delusion that their Canaan was a land flowing with milk and honey. From the first they knew that they were to wrest their living from an ungenerous soil, to struggle with penury, and to conquer in the strife only by constant toil and by self-denying thrift. The forests would supply them with the material for shelter and for fuel. The niggardly earth and the teeming ocean would give them food. Thus three of man's four great physical wants might be met even in bleak and barren New England. But unless the pioneers in the new world were willing to copy the garb of the savages whom they were to displace and dispossess, their adopted home gave them no means for supplying their fourth great need, that of clothing. In the earliest days of the New England colonies the materials of clothing were obtained mostly from England. But when the tide of immigration slackened, about the year 1640, communication with the mother country became infrequent, and the means of supplying clothing to the twenty or thirty thousand inhabitants of the colonies were greatly reduced. It was then that the attention of the colonial governments was called to the necessity of introducing both the agricultural industries that would provide the raw materials and the manufacturing industries that would transform those materials into clothing.

Let us pause for a moment and inquire what was the clothing of our ancestors in the first half of the seventeenth century. The outer garments and the winter undergarments worn by persons of both sexes, and of all ages except the very youngest, were made of wool, most commonly home-spun and hand-woven. The farmer's sheep furnished the coats and nether garments for himself, his wife and his children. The spinning-wheel was in every thrifty household. The yarn might be spun at home, but it was usually turned into cloth by weavers, at so much a pound of yarn, or yard of cloth. For the well-to-do there were tailors, who cut and sewed the garments of their customers; but in the families of the plain people the wife cut and fitted for all the household, and she and her daughters, with the occasional assistance of the village tailoress, made the garments. Linen was almost universally the material of all underclothing except that made of wool. The bed-linen and other

fabrics in household use were then in fact as well as in name composed of the flax fibre. Cotton was not unknown; but not a pound of it was then grown in the country. A few bags of cotton lint were brought now and then from the West Indies, and spun in mixture with wool or flax.

This state of affairs existed almost unchanged, so far as the use of cotton was concerned, until the middle of the eighteenth century. Accordingly, while the colonial and town governments of New England were adopting measures to encourage the raising of sheep, the cultivation of flax, and the spinning and weaving of articles from these fibres, cotton was mentioned in their acts only incidentally. The extent of its use was dependent upon the receipt of a supply of cotton from beyond the sea. Nevertheless, the colonists received the same favors if they spun cotton as if they made use of the other materials. In England there was a gradually increasing employment of cotton fibre; but the industry was everywhere greatly hampered by several causes. No large extent of country in any part of the world was systematically devoted to the culture of cotton. The difficulty of separating the seed from its wing—the fibre of cotton—rendered the preparation of the lint for carding and spinning slow and costly; the machinery for spinning it was clumsy; and the imperfection of that machinery prevented the application of other than hand and foot-power to the production of yarn. All of these impediments disappeared, one by one, between the years 1750 and 1800. There is some evidence that cotton was grown in the Virginia colony at an early period in its history; and as early as 1736 it was cultivated in a small way in Carolina. But it was not until after 1750 that the culture was entered upon in any part of the earth on a large scale, and probably all of the product of this country up to that time was consumed by the growers. A few years later the exportation of cotton began, but in quantities that now would be classed as infinitesimal. It is one of the stock stories of this early period in American cotton-growing, that in 1764* a lot of eight bags of cotton from this country was seized by the customs officers at Liverpool on the theory that it was impossible that so large a quantity should have been the product of these colonies. The navigation laws forbade the importation into England, by any vessel, of the product of any country except that where the vessel was owned. When, later, the eight bags of cotton were released, they remained for a long time unsold, because spinners doubted if the cotton were good enough. During the last quarter of the eighteenth century the United States became, what it has ever since continued to be, the great source of the world's supply of cotton. But the growth of this agricultural industry forms no part of the purpose of this article, and will not be referred to again. The grand difficulty, the separation of the seed from the lint, "ginning" cotton, was overcome when Whitney invented the saw-gin in 1793. This invention insured the supply of cheap cotton in quantities limited only by the demands of the world. Meanwhile the invention of the spinning jenny by Hargreaves in 1767 (patented in 1770), and of the spinning frame by Arkwright in 1769 (patented in 1772), furnished the machinery-principles as a foundation upon which has been built the stupendous structure of the modern cotton-manufacturing industry. Prior to the inventions of Hargreaves and Arkwright the production of fabrics of pure cotton was unknown either in Europe or in America. The calicoes of India were made wholly of cotton, but in all the weaving of England and of the American colonies, linen warps were invariably used even when the weft, or filling, was of cotton.

The foregoing general survey of the infancy of the cotton manufacture will

*Bishop says 1784. The date here given is that in the *Encyclopædia Britannica*.

indicate sufficiently the little importance that is to be attached to individual attempts to establish the industry before the time when the obstacles to its free expansion were removed. Manifestly, while the War of the Revolution was waging, there was no opportunity to take advantage of the new inventions; and even in the times of peace which followed, America was for years cut off from the new privileges by the jealousy and rigor with which England executed its laws against the exportation of machinery or patterns of machinery. But those who had achieved political independence had no thought of continuing to be under the industrial domination of the country from which they had broken away. There was, in all the states, a determination to establish manufactures. If any voice was raised in remonstrance against the idea that the state might impose upon the public funds the duty of encouraging important industries which, without aid, would languish, no echo of that voice has come down to our time. Poor as the people were, their representatives seem rarely or never to have turned away any applicant for assistance in introducing manufactures. One of the earliest—if not the first—instances of such aid during the period illustrates admirably the eagerness of public men to work in this direction. The Hon. Hugh Orr, an enterprising citizen of Bridgewater, Mass., and a member of the state senate, invited Robert and Alexander Barr, like himself, natives of Scotland, to come to this county and to construct at his shop, in East Bridgewater, machinery for carding, roping and spinning cotton. On Mr. Orr's motion a committee of the legislature was appointed to examine the machinery while it was in process of construction, and to report what measures were expedient for encouraging the same. On the report of the committee the legislature in November, 1786, made a grant of £200 to enable the Barr brothers to complete their machines. The machines, after they were finished, were, by order of the General Court, deposited with Mr. Orr, who was requested to exhibit them and explain the principles of their working to any who might seek information with a view to utilizing them in the manufacture of cotton. These machines, together with an attempt to reproduce Arkwright's spinning frame, by Thomas Somers,—for which he received from Massachusetts a grant of £20,—were known as "the state's models." They were visited and examined by several manufacturers,—by Moses Brown, of Providence, among others. So far as is known, only two copies of the machines were ever made, and they were both in the possession of Mr. Brown when the first successful cotton machinery made in the country was constructed by Samuel Slater, also under the patronage of Mr. Brown. But they were one and all worthless, and were condemned as such by Mr. Slater.

The first cotton factory in New England followed, by a year or two, a small enterprise of the same sort in Philadelphia. It was located in a remote and rural part of the town of Beverly, Mass. The movers in the undertaking, and the owners of the factory, were John, George and Andrew Cabot, Joshua Fisher, Moses Brown, Israel Thorndike, Isaac Chapman and Deborah Cabot, all of Beverly, and Henry Higginson, of Boston. The chief owners were John Cabot and Joshua Fisher. When the company was incorporated, in 1789, the names of Thomas Somers (mentioned above as having received a grant of £20 from the state) and of James Leonard were included in the charter. While the mill and machinery were in process of construction the owners appealed to the legislature for assistance. Quickly following the charter of incorporation—in response to the appeal—was a resolve of the General Court granting land in the province of Maine to the value of £500 to "the Proprietors of the Beverly Cotton Manufactory," on condition that the factory should produce, within seven years from the passage of the resolve, "a quantity of cotton and piece goods, of a quality usually imported into this commonwealth, not less

than fifty thousand of yards." It is not known what machinery was really in use in this factory. Somers, in all probability, constructed it; and it may be assumed that he made a rude attempt, not wholly unsuccessful, to reproduce Arkwright's inventions. But his spinning-frames must have been far more clumsy and inefficient than the English originals. This is proved by the inability of this prior enterprise to attain even a fraction of the success which Slater soon afterwards achieved at Pawtucket. Nevertheless the Beverly machines did spin cotton; and the process seemed a marvellous one to the proud Americans of that day. When Washington made the tour of New England in the autumn of 1789 he was taken to Beverly to see the new factory, with respect to which he made this entry in his diary:

"Friday, 30th of October. After passing Beverly, two miles, we came to a cotton manufactory, which seems to be carrying on by the Cabots (principally). In this manufactory they have the new-invented carding and spinning-machines. One of the first supplies the work, and four of the latter, one of which spins eighty-four threads at a time by one person. . . . A number of looms (15 or 16) were at work with spring shuttles, which do more than double work. In short, the whole seemed perfect, and the cotton stuffs which they turn out, excellent of their kind—warp and filling both cotton."

It may be remarked at this point that the Beverly factory, unsuccessful as it was financially, was a type of the cotton factory as it was subsequently developed in this country. That is, it brought together the spinning of cotton from the raw lint, and the weaving of yarn into fabrics. The production of yarn and its weaving were ordinarily regarded as processes quite as unconnected with each other as were the work of the weaver and that of the tailor. The separation of the two, or rather the failure to combine them under one management, has continued in England to the present day. The earliest successful cotton mills of this country were spinning mills only. The addition of weaving was a result of the great success of the factory erected at Waltham, Mass.,—nearly twenty-five years after Washington's visit to Beverly,—in which power-looms were used with great advantage.

As has been intimated, the Beverly factory was not a profitable enterprise. The balance sheets of some of the early years of its operation have been preserved, and they show a steady loss. Before 1798 all the owners of the concern except John Cabot and Joshua Fisher had dropped out. In that year the property changed hands; but apparently the new owners were not successful, for the mill was closed in a few years. It is not known just when it ceased manufacturing, but Bagnall reports a tradition that it was operated until the Embargo of 1807. The blow given to the commerce of Salem and Beverly at that time is the supposed cause of the final cessation of operations. For its time it was a large and important enterprise. The number of spindles reported in 1790 was 636. Yet its failure is a typical episode in the history of the cotton manufacture. In no other industry is the importance of the most improved and efficient machinery so great as it is in this industry. That mill is successful which keeps up its equipment by adopting whatever does the work most quickly and most cheaply, even if that which must be discarded is comparatively new; the mill is comparatively unsuccessful which fails to do so.

We come now to the event which established the cotton-manufacturing industry in this country on a firm basis, and gave it an impetus which it has never lost. On September 1, 1789, Samuel Slater sailed from London for this country, and arrived in New York early in November. The story of his emigration is one of the romantic episodes of trade. Born at Belper, in Derbyshire, England, in 1768, he was apprenticed in his fifteenth year to Jedediah Strutt, who had been Arkwright's partner until a year or two before. Young Slater was so faithful and industrious, and

showed such intelligence, that in three years he was appointed overseer in the mill. He was greatly interested in what he learned about the efforts then making in this country to introduce cotton manufactures, and seems to have resolved upon his future course long before he took the step which made him the father of the industry in the United States. He took pains to familiarize himself with all the details of the construction of the machinery of the mill, particularly of Arkwright's spinning frame. He was aware that he could not carry with him a model of anything, and that the mere possession of a model would subject him to suspicion and detention. When his chosen time had come he left his home in the disguise of a farm laborer, without revealing his intention to any one, even without a word of explanation or farewell to his mother. But from London he wrote to her to relieve her anxiety. He obtained employment with the New York Manufacturing Society almost immediately upon his arrival. Quickly convinced that there was little prospect that this connection would result in the realization of his plans, he wrote to Moses Brown, of Providence, to offer his services in the introduction of improved cotton spinning. Moses Brown was a wealthy retired merchant and a prominent member of the Society of Friends. He had become a partner in his uncle's business firm at the age of twenty-five years, and ten years later withdrew from it with an ample fortune. He was fifty-one years of age when Slater made the proposition just mentioned. He was greatly interested in the introduction of domestic manufactures, and had already, as has been mentioned, not only visited Bridgewater, Mass., to see the models of cotton-spinning machinery, but had become the possessor of copies of the machines. Slater's letter seems to have reached him at a time when the unsatisfactory working of the jennies was causing him peculiar annoyance; and he replied at once, December 10, 1789—Slater's letter to him was dated the 2d of the same month—encouraging him to go to Providence, and virtually engaging his services. Mr. Brown, after saying that the attempt at "water spinning" (that is, spinning by means of frames moved by water-power) had failed because the machinery was imperfect, and there was no one who understood the business, proceeded: "We hardly know what to say to thee; but if thou thought thou couldst perfect and conduct them with profit, if thou wilt come and do it, thou shalt have all the profits made of them, over and above the interest of the money they cost and the wear and tear of them. We will find the stock and be repaid in yarn, as we may agree for six months." He added that if Mr. Slater wished to "have the credit as well as the advantage of perfecting the first water-mill in America, we should be glad to engage thy care, so long as they can be made profitable to both, and we can agree." The word "we" refers to the firm of Almy & Brown, consisting of William Almy, son-in-law of Moses Brown, and Smith Brown, a cousin of Moses. Slater's contract was made with this firm. The connection of Moses Brown with the enterprise does not appear, but evidently he was the real patron of it. The fact that upon Smith Brown's retirement from the firm, less than two years after Slater went to Providence, Obadiah, son of Moses, took his place, indicates how large was his interest in the undertaking. Slater arrived in Providence on or about New Year's Day in 1790. He went to Pawtucket, where was Mr. Brown's machinery, and condemned it at once. He preferred to construct new rather than attempt to make the old usable. He was allowed to have his own way, and quickly showed such skill, and so clearly proved himself competent, that in April, 1790, he became a member of a new firm known as Almy, Brown & Slater. The membership of the firm remained unchanged until 1822, and Mr. Slater was connected with it until 1829.

The machinery provided for in the contract of 1790 consisted of two carding

machines, a drawing and roving frame, and a spinning frame of one hundred spindles. It appears that two frames, one of forty-eight and one of twenty-four spindles, constituted the original spinning capacity of the mill. Manufacturing began, according to Mr. Bagnall's investigations, about the first of October, 1790,* only eleven months after Samuel Slater's arrival in New York. The enterprise seems to have been successful from the first. Yarn was produced not inferior to that made upon Arkwright's own machines. The machinery was housed in a building not constructed for the purpose. In November, 1791, Moses Brown bought a mill privilege, not far from the site of the first factory, and upon it Almy, Brown & Slater erected † the factory, which, with additions and alterations, is still standing in Pawtucket, and is known as "the Old Slater Mill."

This has always been regarded, and should be regarded, as the real beginning of cotton manufacturing in America. The household manufacture was too small in amount to deserve mention. The previous attempts at introducing mill-spinning, of which that at Beverly was by far the most ambitious, prognosticated failure, rather than success, for the effort to establish the industry in this country. Mr. Slater pointed out and took the road to success; and not only did his business continue and grow, but it became a guide to those in Rhode Island and other states who purposed engaging in the trade. Moreover, his mills trained and furnished many of the overseers and workmen who were to establish factories elsewhere on the model adopted by him. His interest in various manufacturing enterprises became large, and his influence extensive. He lived until 1835, when the industry which he had created had become firmly established.

The history of the cotton manufacture in New England, and indeed throughout the country, during the period of about fifteen years following the opening of the mill of Almy, Brown & Slater, is not important. The enterprises were numerous; some of them were successful; most of them languished for a few years and were then abandoned. Every undertaking, without an exception, which had not the benefit of the improved machinery, resulted in failure. The history of this time lacks significance chiefly because the mills were all small—probably not one of them had as many as one thousand spindles, before 1805—and because they were one and all organized on pre-existing models. Bagnall, with admirable industry, has gathered the facts relating to the establishment of eighteen cotton factories in New England subsequent to Slater's mill, and before the year 1805. Some of them had ceased operations before the beginning of the present century; but most of them were still producing goods. Of the eighteen mills, eight were in Massachusetts: at Wrentham, Byfield, Rehoboth, Beverly, Canton, Watertown, Newburyport and Haverhill; six in Connecticut: at Norwich, New Haven, Bethlehem, East Hartford, Suffield and Vernon; three in Rhode Island: at Newport, Warwick (Centreville) and Cumberland; and one in New Hampshire: at New Ipswich. A few only of these need be mentioned further, and they only briefly. The mill at Wrentham, built by Benjamin Shepard in 1791 or 1792, has the distinction of being the only factory in the United States built for the purpose, which has been engaged continuously for one hundred years in the manufacture of textiles. It was a small mill, but it is believed to have had from the first the advantage of improved machinery. Mr. Shepard was assisted by the Legislature of Massachusetts, which made to him a loan of £300. He had two spinning jennies, and could spin one hundred and twenty pounds of coarse and

* December 20, 1790, according to the "Cotton Centennial," Pawtucket, 1891.

† In 1793, according to the "Cotton Centennial," Pawtucket, 1891.

seventy-two pounds of fine yarn a week. Mr. Shepard and his sons continued in the management of the mill until the financial crisis of 1837. Since then, under various owners, it has been engaged in the manufacture of woollens, carpets, and woollen yarns.

A cotton factory, known as the "Warwick spinning-mill," was erected at Centreville, in the town of Warwick, Rhode Island, in 1794. It was at least partially equipped with the then modern machinery, but was not profitable, and in 1799 one-half of it was sold to Almy & Brown. The new partners proceeded at once to operate the mill with their characteristic energy. Evidence is not wanting that there was some unpleasantness at this time between Slater and his partners, who did not admit him to a share in this enterprise. He opposed unsuccessfully their introduction of the latest improvements in the mill at Pawtucket into the Warwick mill. Slater, at nearly the same time, entered into business on his own account by erecting a mill at Rehoboth, Mass., on the opposite side of the river from Pawtucket. A change in the line between Rhode Island and Massachusetts, in 1861, has brought the site of this new mill also into the city of Pawtucket. Mr. Slater, with several partners, one of whom was his original patron, Moses Brown, had bought the water-power and mill privilege on the Massachusetts side of the Pawtucket river. Mr. Brown was opposed to Mr. Slater's plan, and withheld his consent to the separate use of a part of the privilege and water-power by one of the partners. Mr. Slater thereupon applied for and obtained from the Massachusetts court a partition of the property. He then proceeded to erect the factory, in which Almy & Brown had no interest.

The only other mill of this period that will be specifically mentioned here, is that of Seth Bemis, at Watertown, Mass. In its inception, in 1803, it was like the many other small factories of the time. It was a carding and spinning mill, and its product was cotton warps. In 1807 Mr. Bemis set up looms and began to make sheeting, shirting and bed-ticking. Two years later he began the manufacture of cotton duck. Previous to that time all sail-cloth was made from linen. Mr. Bemis seems to have been the originator of the idea which he put in practice at a large profit. The times favored him, for the manufacture of linen duck in this country had ceased; and the interruption of commerce during the era of the Embargo and the War of 1812 gave to him, and to those who followed his idea, a great deal of business. After the close of the war, foreign competition became too severe, and the manufacture of duck was discontinued. It was, however, resumed in 1830, and continued for some years. This mill was almost continuously profitable; and Mr. Bemis and his son operated it for nearly half a century.

In 1805 a new factory was built by Almy, Brown & Slater, in the town of Smithfield, R. I., in that part which has since been known as Slatersville. This event may be taken as the first example, in this country, of the creation of a factory village, out of which have grown the factory town and the factory city. John Slater, who came to the United States in 1803, on the invitation of his elder brother Samuel, entered the employment of Almy, Brown & Slater. When it was determined by this firm to build another mill, John Slater was sent to explore the country to discover a suitable site. He made the journey on horseback, and selected the location on the southern branch of the Blackstone river, in Smithfield. An ample supply of water, and a natural fall of about forty feet were the advantages of the situation. But the country was a wilderness. The site was nevertheless accepted by the manufacturers, and a mill was built there. Before that time no factory—at any rate no one of considerable size—had been erected at a place where there was not already a settlement large enough to supply a good part of the labor. The factory had been lo-

cated where other circumstances had previously attracted population. At Slatersville there was nothing but water and forest, and the advantage of the water-power was the single thing that dictated the selection of a site. The factory village existed at Pawtucket at the time this step was taken. But the Slatersville experiment marks an epoch, in that it was the first of many manufacturing enterprises which assumed, in addition to the ordinary risks of such undertakings, that of forming the community *ab initio*. Inasmuch, however, as Slatersville never became a manufacturing community of the first importance, it will be well to postpone our consideration of the industrial, social and political aspects of the factory town.

We may regard the year 1805, also, as marking the beginning of that period in the history of the country when our foreign relations gave rise to a condition of affairs so favorable to domestic manufactures that the cotton industry has never wholly lost the impetus then imparted to it. The spirit of the people, which led them to desire most earnestly industrial independence, and which manifested itself in a mild form of protection by means of a tariff on imported goods, had already been exhibited. Nevertheless, up to this time cotton goods had not become a necessity to the American people. They were still so costly that the use of them effected little economy as compared with the use of either woollen or linen fabrics. For at this time the price of cotton yarn at Providence ranged from a dollar and a quarter a pound for number 50, down to ninety-four cents for number 12. Very little of the finer numbers was spun, by far the largest amount being coarse yarns. Considering these circumstances, and considering also that the rate of duty imposed on cotton goods—fifteen per cent.—was by no means prohibitory, it will be seen that this industry did not offer extraordinary inducements to Americans to engage in it, either in the extent of the market or in the ratio of profit to capital employed. The favorable conditions were supplied in the two-fold effect of non-intercourse with England in the period of embargo and war. The disturbed and finally broken relations with Great Britain prevented the importation not only of cotton goods, but of linen goods as well. Thus the people of the United States were compelled by the necessities of their situation to substitute cotton for linen underwear; the linen manufacture, always an exotic in this country, was already languishing, and speedily ceased to exist; and consequently the American manufacturers of cotton enjoyed a practical monopoly in a greatly broadened market, until the restoration of peace reversed both the conditions, and for a year or two caused an almost fatal paralysis of the industry. In studying the growth of cotton manufacturing at this epoch, we must not forget that the white population of the United States in 1805 did not exceed five millions; and that the habits of the people in the matter of clothing, as to quality, as to quantity, and in wearing garments until patching and darning could render them usable no longer, made their requirements far smaller than would be those of an equal number of persons, even of persons in the humblest walks of life, at the present day. Nevertheless, when this circumstance is taken into account, the development of the industry between 1805 and 1815 seems large.

The statistics of manufactures at that period are exceedingly faulty. When they represent the result of an effort to obtain the facts they are rendered almost valueless by numerous omissions; when, as was more commonly the case, they are guesswork, they are grossly exaggerated. The following figures, therefore, taken from *Bishop's History of Manufactures*, are presented with all reserve. We are told that in 1809 there were eighty-seven cotton mills in the country, of which sixty-two were in operation, having 31,000 spindles; forty-eight being driven by water and fourteen by horse-power. In 1811 it was estimated that the yearly production of

yarn in New England was 2,880,000 pounds, having a value of \$3,240,000, and that 500 men and 3500 women and children were employed in the industry. In the same year there were said to be thirty-seven mills in Rhode Island, having 32,786 spindles. In 1812 it was reported that there were twenty-four mills in Pawtucket alone, having 24,000 spindles. In 1813 the number of spindles in operation in Providence and vicinity was set at 124,000. This last number includes all the mills in Massachusetts near the Rhode Island line. In 1812 the first mill was built at Troy, Mass.,—the town which was originally known as Fall River, and which resumed its first name in 1834. It will be more convenient to treat hereafter of the development of the manufacture in this, the most important cotton-spinning city of the country.

CHAPTER XIV.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

WALTHAM AND LOWELL.



THE year 1813 is memorable as that in which the Boston Manufacturing Company was incorporated and began operations. This company established the first mill, equipped with modern machinery, in which every process of the manufacture, from raw cotton to finished goods, was performed under one roof. It has been remarked already that the first Beverly factory was a weaving as well as a spinning mill. But the weaving was done by hand, and was a mere transfer of the household system to a mill. The Boston Company's mill at Waltham was in every respect a type of the American cotton factory as it was to be. Its demonstrated economy of operation and the large measure of success it achieved, made it a model and a copy for imitation as conspicuously as Slater's first mill at Pawtucket had been in its day. The distinguishing feature of the enterprise within the mills was the power loom. But no less important than this, and not less contributory to the success of the enterprise, was the extraordinary care taken for the moral protection of the operatives. The power loom, or, as it was at first called, the water loom, enabled spinners who produced a large amount of yarn to consume the whole product in their own mills. The care exercised in the employment of help opened to them a labor market of the best sort—one which was, indeed, the only source of labor to which the manufacturers of that day could turn. The two features of the Waltham experiment were introduced in the enterprises in which the same and other capitalists engaged, on the streams of the three northern New England states, and gave the tone to all the factory towns which sprang up there. We will notice the two in order.

An interesting account is given by Mr. Nathan Appleton* of the inception and early history of the Waltham enterprise, and of its extension on the banks of the Merrimack. The idea of engaging in cotton manufactures on a large scale was first conceived by Mr. Francis Cabot Lowell, who suggested it to Mr. Appleton, at Edinburgh, in 1811. Mr. Lowell remarked at the time that he was going to Manchester to study the industry and find out all that he could in regard to it. Mr. Appleton encouraged him to do so. In 1813 Mr. Lowell returned to this country full of his

* Introduction of the Power Loom, and the Origin of Lowell.

project, and thoroughly convinced that the power loom commanded the situation. But it was well nigh impossible to learn anything in England in regard to the invention, so closely was the secret guarded, and Mr. Lowell was forced to set his own inventive faculties at work to construct his loom. He enlisted the interest of Mr. Patrick T. Jackson in his scheme, and then renewed his proposition to Mr. Appleton, who agreed to take a share in the enterprise. Mr. Jackson, who had displayed great ability as a supercargo in his early life, and who had been, since 1808, successfully engaged in the India trade as a merchant in Boston, promised to give up all his other interests and devote himself to the new enterprise. A charter was obtained for the Boston Manufacturing Company, with an authorized capital of four hundred thousand dollars, of which one hundred thousand was raised at once. An old mill was bought at Waltham, remodeled and equipped with seventeen hundred spindles.

While this work was going on Mr. Lowell was engaged in making his loom. He called to his aid the services of Mr. Paul Moody, of Newburyport, a mechanic of famous skill; and these two constructed first a working model and afterward a loom of working size. Their experiments were carried on in a room on Broad street, Boston. The loom was ready for putting in motion about the time the Waltham mill was in a condition to receive it; and then only were the associates of Mr. Lowell permitted to see it and admire the efficiency of its operation. It was successful from the start, but several modifications were made in it later, chiefly in the substitution of crank motion for the cam motion at first employed by Mr. Lowell. The factory had several other improvements, mostly the devices of Mr. Moody, or jointly invented by him and Mr. Lowell. These improvements were not introduced at once, but some years later, when the company had already become prosperous. Moody's first patent was for a winding frame. The next was for the warper. The hand loom had required no special preparation of the warp threads, but the speed of the shuttle rendered it necessary to apply sizing to the warp. The Boston company obtained from England a description of Horrock's dressing machine, but no method was indicated of winding the threads from the bobbins on the beam. Mr. Moody invented the warper and the stop-motion, and obtained a patent for it in 1818. The use of soapstone rollers, which proved highly advantageous, was the result of a chance observation by Mr. Moody's brother. Another accidental remark led to the invention of a method of spinning filling directly on the cop, which was patented in 1821. The most important invention of all was the double-speeder. The original "bobbin and fly," or "jack frame" for spinning roving, which was introduced from England, had no fixed principle for regulating the changing movements necessary in filling a spool. Mr. Lowell made the very intricate mathematical calculations necessary for the regulation of this movement, and Mr. Moody carried them into effect. The inventions were the subject of three patents. The feat of Mr. Lowell in calculating to a mathematical certainty what was required, was justly regarded as extraordinary. A full account of Mr. Moody's life and work is to be found in a paper by W. R. Bagnall,* from which most of these facts are drawn.

To return to the time when the mill was started. The factory began to produce cloth, but it had no market. There was but one shop in Boston, kept by a Mrs. Bowers, where domestics were on sale, and she could not dispose of the Waltham goods. The company had recourse to an auctioneer, and made a sale at a price—more than thirty cents a yard—which was higher than had been anticipated. The

* Old Residents' of Lowell Historical Association Papers, vol. iii., p. 57.

goods took the popular fancy, and soon sold easily through a firm of selling agents in which Mr. Nathan Appleton was a partner. The goods are described as unbleached sheeting, thirty-seven inches wide, of No. 14 yarn, forty-four picks to the inch, and weighing nearly three yards to the pound.

Not long after the Waltham mill was put in operation the cessation of the War of 1812, and the resumption of intercourse with Europe, resulted in a greatly enlarged importation of goods from abroad, and consequently in a severe depression of the domestic industry. Mr. Appleton reports that in 1816 he visited Pawtucket in company with Mr. Lowell, and found that in that original home of successful cotton manufacturing in America, not a single spindle was running, except a few in the old Slater mill, in the production of yarn. He found all the manufacturers "sad and despairing." Mr. Appleton himself tried to persuade them that their salvation lay in the use of the power loom, and assuring them that with that they would find the then-existing tariff sufficiently protective. But it was through the influence exerted by the Boston Manufacturing Company, indeed by Mr. Lowell himself, that Congress in that same year, 1816, first adopted the principle of the "minimum," that is, that in the assessment of an *ad valorem* duty on cotton yarn or cloths those of low grade should be assumed to be worth at least a certain sum per pound or per yard.

The measures taken for the moral protection of the operatives were extensive and far-sighted. The corporation became a direct supporter of the institutions of religion. Indeed, the influences intended to furnish proper social conditions for its help were exerted in all possible ways. They are detailed in an interesting sketch of the life of Patrick T. Jackson, by Hon. John A. Lowell, published in the papers of the Old Residents' Historical Association, of Lowell,* as embodying the principles afterward introduced in Lowell itself:

"By the erection of boarding-houses, at the expense and under the control of the factory; putting at the head of them matrons of tried character, and allowing no boarders to be received except the female operatives of the mill; by stringent regulations for the government of these houses; by all these precautions they gained the confidence of the rural population, who were now no longer afraid to trust their daughters in a manufacturing town. A supply was thus obtained of respectable girls, and these, from pride of character, as well as principle, have taken especial care to exclude all others. It was soon found that an apprenticeship in a factory entailed no degradation of character, and was no impediment to a reputable connection in marriage. A factory-girl was no longer condemned to pursue that vocation for life; she would retire, in her turn, to assume the higher and more appropriate responsibilities of her sex; and it soon came to be considered that a few years in a mill was an honorable mode of securing a dower. The business could thus be conducted without any permanent manufacturing population. The operatives no longer form a separate caste, pursuing a sedentary employment, from parent to child, in the heated rooms of a factory; but are recruited in a circulating current from the healthy and virtuous population of the country.

"By these means, and a careful selection of men of principle and purity of life as agents and overseers, a great moral good has been obtained."

Mr. Francis C. Lowell died in 1817, at the early age of forty-two years. He had been the moving spirit and the leader in the establishment of the pioneer cotton factory, complete in all the operations of the manufacture, which is still the model for the industry in America. Addition after addition had been made to the number of mills, the full amount of capital had been taken up, and the enterprise was by far the greatest in the country. Mr. Lowell's decease inflicted a great loss on the corporation; but he had able associates, who took up, carried on and extended his work. The wonderful success of the Waltham factory led the chief owners to

* Vol. i., p. 199.

consider the matter of seeking a larger water-power. Through Mr. Paul Moody, whose mechanical knowledge had contributed so greatly to that success, attention was drawn to what was known as the Pawtucket Canal, a work at East Chelmsford, on the Merrimack River, where now the city of Lowell stands. An examination of the situation convinced the capitalists that the place was favorable. They began negotiations for the purchase of a controlling interest in the shares of the Canal Company. They also began, through an agent whose ultimate plans were not known, to acquire, one by one, the farms lying along and near the river. At that time, the autumn of 1821, there were not more than a dozen houses in all the region where the manufacturing and business of Lowell are now carried on. There were five men in the enterprise at the beginning: Nathan Appleton, Patrick T. Jackson, Paul Moody, Kirk Boott and John W. Boott. Mr. Kirk Boott became the treasurer and the active business man, and thereafter until his death, in 1837, was a prominent personage in the manufacturing world. The new owners of the Canal Company organized and procured a charter for the Merrimack Manufacturing Company, which was granted in February, 1822. Work was begun immediately on a factory, which was completed and the machinery set in motion, on the first day of September, 1823. Just previous to this time an arrangement was made with the Boston Manufacturing Company, which the foresight of the stockholders in both corporations showed to be necessary. The Boston Company was the owner of the right to use several important improvements, already mentioned, which the Merrimack Company must needs use in its operations. The Boston Company was an owner of stock in the Merrimack Company. The shareholders of both corporations were largely the same persons. Accordingly, by mutual transfers of stock at rates agreed upon, the interest of each stockholder was made equal in each company. Subsequently, in 1825, the shares in the Locks and Canals Company, having been increased to equal the number of shares of the Merrimack Company, were distributed share for share to the Merrimack stockholders.

The purpose of the projectors of the Merrimack Company had been to introduce calico printing, which was an industry unknown to the country when they began operations, but they were anticipated in the production of prints by other mills—one at Dover, N. H., (now the Cocheco Manufacturing Company) and the other at Taunton. The first experiments of the Merrimack Company seem not to have been successful, and help was sought from abroad. Mr. John D. Prince, of Manchester, England, who was familiar with the business, was persuaded to remove to Lowell, and was placed in charge of this part of the work. He continued at the head of the department from 1826 until 1855, when he retired. The old process of printing from blocks was just becoming obsolete when the Merrimack Company began to engage in the business, and was superseded by the process of printing from cylinders—as many cylinders as the number of colors employed being used successively in one process. Mr. Boott made a journey to Europe to procure engravers for the cylinders, but experienced not a little difficulty, so closely was the art kept secret.

The first sale of land for another corporation was made in 1825 to the Hamilton Company, which was organized largely with the view of securing the services of Mr. Samuel Batchelder, a gentleman whose connection with the cotton manufacturing industry in the United States extended over sixty years. Several efforts had been made to persuade Mr. Batchelder, then in charge of a cotton mill at New Ipswich, N. H., to remove to Lowell and prepare to take the place then filled by Mr. Ezra Worthen—a place similar to that occupied by Mr. Paul Moody, his cousin, at Waltham. Mr. Worthen, a very competent man, was afflicted with an incurable

disease which indeed soon carried him off. As Mr. Batchelder could not arrange his business, Mr. Moody was called from Waltham, on the death of Mr. Worthen. Again attempts were made to induce Mr. Batchelder to visit Europe in the interest of the Lowell manufacturers, but again his own business engrossed his attention so greatly—for he was a merchant as well as a manufacturer—that the negotiations were not successful. At last a proposition was made to him to take an interest in a new factory at Lowell, of which he was to be the agent. He consented, and in the charter of the company—the Hamilton, as has been mentioned—he was named as the first corporator. The mill was intended to engage in the manufacture of twilled and fancy goods. The burden of the organization, of the construction of the mill, and of the operations after manufacturing began, fell upon Mr. Batchelder. The Hamilton began the manufacture of an entirely new fabric, now widely known as drilling. It subsequently became the staple article of domestics to be exported. The foreign trade grew rapidly in the years before the Civil War. In 1860 more than three-fourths of all the cotton goods sent abroad were drills. In the year 1828, Mr. Patrick T. Jackson originated the Appleton Mills, for the purpose of utilizing some improvements in machinery devised by Mr. Moody. In the same year the Lowell Manufacturing Company—which is now chiefly devoted to carpet making—was established. The success of the drillings made by the Hamilton was such that Mr. Jackson investigated the cost of changing the machinery of the Appleton to adapt it to that article. It was found that the delay would be so great that the better plan was to organize a new company. At this time, however, the industries of the country were prostrated as the effect of the general commercial depression which afflicted the country in 1827–29. In the year 1829 the Merrimack Company made no dividend. The condition of things led the Locks and Canals Company to offer special inducements to capitalists to buy land and water-rights. Thus Amos and Abbot Lawrence were brought into the Lowell enterprise, and in 1830 the Suffolk, Tremont and Lawrence Companies were formed. The Suffolk was designed for the manufacture of drills. Subsequently the Tremont and Suffolk were consolidated, and the space between their mills was filled in by an extension of the factories. The list of great cotton factories in Lowell is completed by the Boott, organized in 1833, and the Massachusetts, in 1839.

Mr. Batchelder remained at Lowell a few years only. A difference arose between him and the directors, who—intending to relieve him of a part of his great care—really superseded him in what he regarded as an essential part of his authority. He accordingly resigned as agent in 1831, and refused to reconsider his determination. It may be well here to complete a brief biography of this remarkable man. After retiring from the Hamilton Company he had many advantageous offers, and chose one to go to Saco, where the York Manufacturing Company was organized in April, 1831. Afterwards he was engaged in the establishment of the Saco Water Power Company, the Laconia Mills—February, 1841—at Biddeford, opposite Saco; and the Pepperell, also at Biddeford, February, 1844. He resigned the agency of the York Mills in 1846. In 1847 he became treasurer of the Portsmouth Steam Mill in New Hampshire; was connected with the Exeter Manufacturing Company, and became treasurer of the Everett Mills at Lawrence in 1860. In 1870, at the age of eighty-six years, he resigned all his official positions. He was then president of the Hamilton, Appleton, Essex, Everett, York and Exeter Mills. He died at his home in Cambridge, Mass., in February, 1879, at the age of ninety-five.*

* Sketch of Samuel Batchelder, by W. R. Bagnall, *Old Residents' Historical Association Papers*, vol. iii., p. 187.

The usual result followed the establishment of a great and rapidly-growing village in what was previously a somewhat sleepy country town. In 1824 the first petition was sent to the General Court for a separation from Chelmsford, and in 1826 the town of Lowell was incorporated. Mr. Appleton narrates that when the name of the new town was to be given Mr. Boott said to him that the only names suggested were Derby and Lowell. Mr. Appleton expressed a decided preference for Lowell, and that name was given, in memory of Mr. Francis C. Lowell, who had begun the movement out of which, after his death, this great new enterprise had sprung. The population of Lowell in the first year of its existence was twenty-five hundred. In 1830 it was nearly sixty-five hundred; in 1836, when it received a city charter, seventeen thousand six hundred and thirty-three. Half a century ago, in 1845, when all the cotton manufacturing corporations had been established, substantially with their present capital, the population was nearly thirty thousand, making it at that time the second city of the commonwealth.

It is to Lowell as it was at this time that we wish to call particular attention, as it was then the best and most typical example of the New England factory *town*,—different in important respects from the later development,—the factory *city*, of which Fall River is the most complete type. A little publication, "Lowell as It Was and as It Is," bearing date 1845, provides us with all the materials necessary to draw a picture of the Lowell of half a century ago.

There were at that time thirty-three mills in Lowell, belonging to the several corporations already mentioned, and about five hundred and fifty boarding-houses, also the property of the corporations. Each company built a large number of boarding-houses for the use of its operatives. While there was no compulsion to live in a building owned by the company, the operatives both male and female found it convenient and economical to do so. But none save the operatives in the company's mills were admitted to the boarding-houses. None of the corporations kept shops to attract the trade of operatives, nor were wages paid otherwise than in money, except that, from the wages of those who boarded at one of the corporation boarding-houses, the board was deducted. It should be said that the boarding-houses were leased to keepers whose only responsibility to the corporations was to pay the rent and conform to the regulations, in the interest of cleanliness, good order and morality, established for their guidance. In no case were men and women boarded in the same tenement. The price of board was uniform at one dollar and seventy-five cents for men, and one dollar and twenty-five cents for women. The meals were served at the same hour at all the boarding-houses throughout the manufacturing district. In winter breakfast was eaten before going to work; but during the rest of the year there was work before breakfast. Dinner was at half past twelve the year round, and a half hour was allowed for it. Supper came after the mills had shut down for the night. The hours of labor, according to a careful investigation in 1845 averaged twelve hours and ten minutes a day throughout the year, varying from eleven hours and twenty-four minutes in December and January to thirteen hours and thirty-one minutes in April. Lamps were never lighted on Saturday evenings. There were four holidays only: Fast Day, the Fourth of July, Thanksgiving and Christmas. The hours which any one person actually worked were, however, less than has just been stated, for there was a system of "spare hands" in vogue, which enabled those who wished to absent themselves for a time to do so. A girl, fresh from the country, would be taken as a spare hand and pupil. Her wages were only fifty-five cents a week and her board. She was expected to be ready to take the place of any woman who wished to take a whole day or a part of a day "off." A rigid inquiry into the

hours actually devoted to work by all the women in one of the Boott mills showed an average of twelve hours and ten minutes. That even this was thought to be somewhat beyond the proper requirement may be gathered from the apologetic words of the author of "*Lowell as It Was and as It Is*:" "It must be remembered, however, that their work is comparatively light. All the hard processes, not conducted by men, are performed by machines the movement of which the female operatives are required merely to oversee and adjust." Even this is not thought at the present day to be a sufficient excuse for allowing women to work as many as sixty hours a week.

Prior to 1851, when a new time-table was adopted, the following rules prevailed :

From November 1st to 20th.—First bell, 4:30; second, 5:30; "work to begin as soon as the hands can see to work."

March to November.—Work before breakfast.

November to March.—Breakfast before going to work.

May to September.—Half an hour for dinner.

September 20th to March 20th.—Work continued till 7½ p. m.

March 20th to May 1st.—"As long as they can see to advantage."

May to September.—Until 7 o'clock in the evening.

September 1st to 20th.—"Until dark."

Who were the operatives? About one-third of the whole population of the city, that is to say, about ten thousand persons were either employed directly in the mills or connected with mechanical employments arising out of the factory industry. Three thousand were men; more than six thousand, women. We have little information as to the nativity of the men, but it is probable that the most of them were Americans. That is certainly true of the women. Some very remarkable statistics were gathered in 1845 by setting one overseer employed by each of the eight great cotton manufacturing corporations at the task of making a personal canvass of all the women employed in one mill. For example, there were one hundred and ninety-one girls in Appleton Mill No. 2. Of these thirty-six were born in Massachusetts, fifty-nine in Maine, fifty-seven in New Hampshire, eighteen in Vermont, two in New York, four in Canada, and fifteen in Ireland. Seventy-four were connected with Sunday-schools, either as pupil or teacher; fifty-one were members of a Christian church; six had been school teachers. The whole inquiry dealt with one thousand five hundred and twenty-seven girls in eight mills; of whom one hundred and eighty-nine were born in Massachusetts, three hundred and sixty-seven in Maine, five hundred and nine in New Hampshire, two hundred and sixty-seven in Vermont, forty-eight in Canada, and one hundred and sixteen in Ireland; thus accounting for all but thirty-one. There were six hundred and eighty-nine connected with Sunday-schools, five hundred and fifty church members, and one hundred and twenty-eight former school teachers. The importance which was attached to the religious well-being of the operatives is shown not merely by the attention given to it in these statistics. The Merrimack Company built a church (St. Anne's) for its operatives. Mr. Boott was a devoted adherent of the Episcopal Church, and it was through his influence that the place of worship erected by the corporation was given to that denomination. Among the early regulations of the Merrimack Company was one not long enforced, that every employé should agree to attend some church once on each Sunday.

It is probably true that the factory population of Lowell in the early days of the town and city was of higher intellectual and moral tone than was ever before or has ever since been seen in any similar community in the world's history. The principles already mentioned as having been applied at Waltham were continued and extended at Lowell. The factories drew the very best of the farmers' daughters of New

England. They were self-respecting and they commanded respect. They lost nothing of their standing in society by engaging in this employment. They went to Lowell—indeed at this time they went to other factory towns, but Lowell was the great centre—worked for one, two or more years in a factory until they had earned a goodly sum, and then returned home, married and settled down as farmers' wives. "We have no permanent factory population," says the author of the little work already quoted. "This is the wide gulf which separates the English manufacturing town from Lowell. Only a very few of our operatives have their homes in this city. The most of them come from the distant interior of the country. . . . The female operatives in Lowell do not work on an average more than four and a half years in the factories. They then return to their homes and their places are taken by their sisters or by other female friends from their neighborhood." *

"Black-listing" is very unpopular at the present day, but at that time it was both popular and beneficial. When an operative was discovered to be an improper person, as well as when he or she was inefficient, that person was discharged, and the name was sent around to the other factories. The girls were there, because the policy of the corporations made it morally safe for them to be there, and the system of black-listing was a protection to them. Moreover, it was a necessity for the corporations, which had only the New England country population to draw upon for help, and which would lose this source of supply were those safeguards, which gave assurance to the parents of the farm girls, to be relaxed.

The publication known as the *Lowell Offering*, a periodical originated, conducted and written by Lowell factory girls, was, perhaps, the most remarkable and characteristic intellectual product of the community. It is no doubt true that many of the contributions were crude in a literary sense; but that working girls, whose hours of manual labor averaged more than ten a day, should have conceived and carried out the idea of a publication of that sort, illustrates and proves conclusively their superiority to the conditions under which they were willing for a time, and with a definite object in view, to place themselves. That they were nevertheless not wholly given over to the pursuits of the "blue stocking" in their hours of emancipation from toil in the factory is quite evident from the chronicles of the time. The following account, which is copied textually from a lively sketch of life in Lowell in the forties, is ambiguous as to the day on which the great annual ball took place; but it leaves no doubt in the mind of the reader that it was always a memorable occasion. It was intended to celebrate the coming of the season when the mills were run by daylight only:

"The 'blowing-out ball,' which, under the foregoing rules, was a regular annual event, took place on the night of March 20th. To prevent any ambiguity in regard to the title of this festive occasion, it is proper to say it applied only to the cessation of 'lighting up.' It was invariably the great ball of the season, which mechanics and mill-hands, cooks and clerks, drivers and draymen, merchants and menials, matrons and maidens, bachelors and benedicts, were all expected to attend, and took place annually on Washington's birthday. 'Tickets, Five Dollars. Dancing to begin at five o'clock, P. M.' It was commonly daylight of the 23d before it ceased."

The creation of a community like that of Lowell reflected the highest credit upon the originators of the enterprise; and chief among them was Mr. Kirk Boott. He had entered into the undertaking at a time when he craved occupation, and

* "Lowell as It Was and as It Is," p. 129.


threw all his energies into it. He was far-seeing, gifted with large powers of leadership, persevering and industrious. At his death, in 1837, not only all Lowell, but the commonwealth mourned a great loss.

Time has wrought a large change in Lowell. The distinguishing features of the early city have disappeared. With the large influx of a foreign population the character of the help employed in the mills has undergone the successive changes which have been witnessed in other factory towns. The boast that "we have no permanent factory population" is no longer true. Nor is there anything in the history of the cotton manufacture in Lowell during the last quarter of a century that calls for special mention. The city has shared the prosperous times and has suffered with manufacturers generally during the seasons of depression. But there can be no doubt that even at the present time the factory population there and elsewhere still enjoys some of the benefits that had their origin in the wise system pursued when Lowell was founded.

CHAPTER XV.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

FALL RIVER.

 THE development of cotton manufacturing at Fall River differs in its methods and in its course so widely from the growth of the system which had its origin at Waltham, that it must be treated by itself. The beginning of the industry at Fall River was almost contemporaneous with the erection of the Boston Manufacturing Company's first mill. Yet the marvellous increase which has made it by far the largest centre of cotton spinning in America, and perhaps the second in the world, did not begin until several years after the last of the great Lowell corporations had begun operations; not until the exhaustion of the water-power at Lowell had led to the building of Lawrence; not until long after the extension of cotton manufactures to the falls on the Merrimack, Nashua, Saco, Androscoggin and Kennebec rivers. In fact, up to the year 1846 Fall River operated less than one hundred thousand spindles, and in 1865 it had but 265,000. But the development which has since taken place forms one of the most striking chapters in the industrial history of the country. Moreover, it presents some features which deserve as careful and detailed treatment as might be accorded the evolution of the industry, on different lines, in northern Massachusetts and in the communities of Maine and New Hampshire, which were in a strict sense outgrowths of the Waltham experiment. One striking difference between the two systems should be mentioned at the outset. Whereas the cities of Lowell, Lawrence, Manchester, Nashua, Biddeford and Lewiston, each and all owed their development to capital, chiefly of Boston merchants, invested in land, water-power, buildings and machinery, and may thus be classed as creations from without, Fall River has at all times grown from within. It has never solicited and rarely received capital from persons not resident in the city. The profits of the cotton manufacture, and of allied and dependent industries, have been the source from which new capital was drawn. An important result of this endogenous growth has been that the management of the mills has always been in the hands of citizens of Fall River, and the

system which prevails in the other cities just named, namely, of a non-resident financial control, is unknown.

Fall River owes the beginning of the industry to the possession of a magnificent water-power on the stream which gives the city its name; the enormous expansion of that industry it owes to the energy, thrift and intelligence of manufacturers, and to a situation and climate eminently suited to the conditions necessary for successful cotton spinning. The town was separated from Freetown and incorporated in 1803. In 1804 its name was changed to Troy, but the original name, Fall River, was restored in 1834. The water from a chain of ponds situated about two miles east of Mount Hope Bay forms the "river"—barely a mile and a half in length—which, in the last half mile of its course, has a fall of fully one hundred and thirty feet. While this water-power, wonderfully regular and copious, was the mainstay of the industry during the early years, it has long ago ceased to be of importance, or to give any advantage over others to those mills which are located upon the stream. Strictly speaking, not even the first cotton mill within the present limits of Fall River was located upon the river. The boundary line between Massachusetts and Rhode Island was not established finally until 1861. The line agreed upon converted into Rhode Island territory, and included in the town of Pawtucket, land which had previously belonged to Massachusetts; it brought into Fall River a part of the former Rhode Island town of Tiverton. Within this last-named tract, in Globe Village, a small wooden building was used as a cotton factory as early as 1811. The leading owner was Colonel Joseph Durfee, whose name suggests the interesting fact that certain family names are to be found on every page of the industrial history of Fall River. The business has been handed down from father to sons in a steadily broadening succession, until, at the present day, we find many grandsons of the pioneers in the cotton manufacture of the city occupying positions as owners, presidents, treasurers and managers of the great corporations.

The Tiverton mill seems not to have been very successful. But in 1813 two corporations were formed, both of which are still in existence and in flourishing condition. The Fall River Company was organized by David Anthony, Dexter Wheeler and Abraham Bowen. Mr. Anthony, then twenty-seven years of age, a native of the neighboring town of Somerset, had been employed four years, from 1808 to 1812, in the Pawtucket factory of Samuel Slater. The mill erected by him and Mr. Wheeler was at the head of the third fall from tide-water, was a structure forty by eighty feet, and three stories high, and was intended for fifteen hundred spindles.* Mr. Anthony's name is associated with the progress of Fall River, as one of its most active and sagacious men, up to the time of his death in 1867. The Fall River factory itself was not an important enterprise, but Deacon Anthony's prominence in the business of the community is illustrated by the fact that he was president of the Fall River Bank from its organization in 1825, for a period of forty years. He retired from active manufacturing business in 1839; nevertheless, twenty years afterward, at the age of seventy-four years, he became interested in the establishment of the Union Mills, became the treasurer of that corporation, and fulfilled the duties of the position until his death. The Fall River mill was at first a spinning mill only. The Waltham factory had not then demonstrated the possibilities of the power loom. But in 1817 weaving was introduced. The looms were the invention of Dexter Wheeler, and are described by one who operated the third loom set in motion as "very heavy and clumsy, and con-

* Centennial History of Fall River, p. 12. From this volume a large part of the information relating to Fall River has been obtained.

stantly getting out of order, weaving one yard of good cloth and ruining the next through want of control of the shuttle. The dressing was very poor, and at times the yarn would mildew and rot on the beam, causing large quantities to be thrown away." * Weavers were at first paid two dollars and a half a week. Afterward, when the looms had been improved and the help had acquired skill, one cent a yard was paid,—at which rate a weaver, tending two looms, could earn about thirty cents a day. The cloth produced was plain woven, one yard wide, and sold at twenty-five cents a yard.

The chief promoters of the Troy Cotton and Woollen Manufactory were Oliver Chace, Nathaniel Wheeler and Eben Slade, but among those who signed the articles of association on March 8, 1813, appear the names Borden, Buffinton, Durfee, and others which have been identified with Fall River manufacturing at all periods of its history. A charter was granted by the General Court in 1814, and the capital was fixed at \$66,000. The mill erected was one hundred and eight feet long and thirty-seven feet wide, and four stories high, and it was planned for two thousand spindles. Oliver Chace was a carpenter and wheelwright by trade. It was due to his efforts that the Troy mill was built, and he was chosen agent and superintendent. The company had barely begun to produce yarn when the conditions which had seemed so favorable for the enterprise—the existence of war and the consequent exclusion of foreign goods—came to an end, and the industry languished. There is a pathetic interest attaching to a minute adopted by the directors in 1816, indicating that a vigorous application of economy was necessary. It reads: "Agreed with Oliver Chace to transact the business of the company in behalf of the directors, and to give him two dollars per day and find him sufficient house-room for his family, (and garden), and he, the said Oliver, to board the directors at these meetings, as heretofore, without making any charge to the company; this until further agreement." The power loom was not introduced in the Troy Company's mill until 1820. In the next year the company began the production of stripes. The yarn was dyed in a small dye-house belonging to the mill. The following very interesting statement of the methods of manufacturing, and concerning the operatives in the mill and their mode of life, is copied from a manuscript of Deacon David Anthony, written in 1859, quoted in the Centennial History of Fall River:†

"In the cotton business of that day there was a great amount of bookkeeping and clerical work, of which very few manufacturers now have any idea. Every bale of cotton put out to be picked was booked, as was also every web given out to be woven. A mill of seven thousand to ten thousand spindles required more labor to take care of the yarn after its leaving the reel, and prepare it for, or get it into, the market, than all the spindles in Fall River now (1859) demand.

"The price paid by the mills for picking the cotton given out was four cents per pound, and five or six pounds was considered a fair day's work. The Fall River mill secured Blair's Picking Machine, the first one in the place, and was, in fact, just introduced in the country. This acquisition in 1814 was calculated to save three-quarters of the cost of picking. The improvement encountered a violent opposition in the ignorant prejudice of consumers both of yarn and cloth, who believed its operation was detrimental to the staple, and consequently to the cloth itself.

"The dressing of the yarn for the looms was at first attended with much difficulty and vexation. The first dresser used by the Fall River Company warped the beam by sections, say, one-eighth of a yard at a time, the beam which received the yarn having as many sections as there were quarters of a yard to the web. This process of dressing was so trying and troublesome that an altogether different machine was devised, an improvement upon the Waltham dresser, which received the yarn of section warps from beams revolving over a small round roll. It was some years before this device gave place to the dresser now in use.

* Centennial History, p. 16.

† P. 18, *et seq.*

"Until about the years 1820 to 1825 the roping was made in cans, with open tops, or with tops which required to be wound upon the bobbin, by hand, for use. The want of a better roving machine was a serious evil in early manufacturing, greater speed of process being sadly wanted. Speeders, so-called, were used of various designs: Hinds's, Arnold's, Simmons's, Orswell's (a kind known only in Fall River), and the Waltham, which, with all the other Waltham inventions, for a time enjoyed the precedence.

"The yarn spun was reeled from the bobbin upon reels, 18 inches over, into skeins of 7 knots, 80 threads to the knot. Twenty skeins were termed a doff, for which some three or four cents were paid; the yarn was next *sorted*, and every skein weighed separately, thus determining how many skeins weighed a pound.

"The yarn so sorted was put up into five-pound bundles, ready for market.

"In the early stages of cotton-spinning only a small proportion of yarn was spun over No. 16, for simple want of a demand. Yarn designed for plain cloth, sheetings or shirtings, was bleached upon the grass, no chemicals being used, and a good whitening required from four to six weeks. Most of the yarn produced was woven into blue and white stripes, chambrays, tickings, etc. The several prices were: for stripes, 38 cents; shirtings, 11 cents; sheetings, 50 cents, and tickings, occasionally as high as \$1 per yard.

"The wearing apparel of male operatives was generally cotton velvet, five eighths wide, costing about \$1 per yard. Females wore stripes, 1 and 3, 2 and 2, 4 and 2, etc., for their dresses, the making up costing from 50 cents to 75 cents.

"The imperfect development of the weaving machinery of the loom, particularly through the unreliable motion of the shuttle, made a great deal of poor cloth during those opening years of our manufacture. The best weaving was at the rate of 85 to 100 picks per minute, turning out from 17 to 20 yards a day as an excellent result. Power-loom production was also regarded at first suspiciously, some still clinging to hand-wove fabrics, while others insisted upon the threads being all warp, on account of its having more twist than the weft spun for filling. A popular use for the warps then made, the coarser yarns, among the country people, was to weave them into flannels for sheets and underclothing; but for the finer article of production, really fit for good shirtings, we were still dependent on the foreign manufacturers.

"During the year 1813-14 both the Troy and Fall River companies erected several tenement houses, at a cost of \$1500 each, for their work-people, in which the agents also lived. The capacity of these first tenement structures in the place was large enough for four families.

"The operatives, with the rare exception of an occasional Englishman, were all natives. Very many of them, and nearly all the overseers, were persons whose previous occupation had been sea-faring, the suspension of commerce during the war obliging them to seek a new industry. Capable and good men could be hired as overseers at from 4s. 6d. to 7s. 6d.* per day, payable mostly from the factory stores. Female operatives received from \$2.75 to \$3.25 per week, having to pay \$1.75 for their board. Groceries were exceedingly high—tea 10s. 6d. per pound, sugar 25 cents, coffee 33 cents, molasses from \$1 to \$1.25 per gallon, and flour \$17 per barrel. Fuel (wood exclusively) and house rent were of course very much lower than they are at the present time (1859), however, so that families were able to live quite comfortably."

The year 1821 witnessed the beginning of two enterprises that were destined to exert an immense influence in developing the industries of Fall River, namely, the Pocasset Manufacturing Company, and the Fall River Iron Works. A tract of land, together with the falls, just west of Main street, passed into the hands of the Rodmans, of New Bedford, who formed the Pocasset Manufacturing Company. The original intention was to erect a grist-mill, but the plan was changed, and the "bridge mill," so called, was built. Oliver Chace, of the Troy mill, was employed as agent. One thousand spindles were placed in the south half of the building; the north half was leased. The Pocasset Company adopted the policy of encouraging and assisting small manufacturers. In 1825 arrangements were made with Andrew Robeson, who was connected by marriage with the Rodmans, and who had come from New Bedford the year previous, to lease to him a part of the factory just erected, for the

* New England currency is here intended—six shillings to the dollar. "Four and six" was seventy-five cents; "seven and six," a dollar and a quarter; "ten and six," a dollar and seventy-five cents.—*E. S.*

purpose of establishing a calico printing business. As the Pocasset Company began, in its "bridge mill," the manufacture of the print cloths which have made Fall River famous, we thus trace to its origin the two branches of a vast industry. Additional mills were erected in 1826 and 1827. The latter of these mills, then known as the Massasoit, and now as the Wetuppa mill, was leased for fifteen years by Holder Borden. It was a bold step for a young man only thirty-one years of age, for the mill contained nine thousand spindles, and was thus three times as large as the ordinary mill of the time. Mr. Borden began the manufacture on a large scale of various fabrics. He was the first in Fall River to introduce the system of transmitting power by means of belts.

The Fall River Iron Works Company, which was also organized in 1821, was destined to exert a great and controlling influence for many years upon cotton manufacturing, both as a corporation and through the individual stockholders. The men who formed the company were Richard Borden and Bradford Durfee—the two promoters—Holder Borden, David Anthony and William Valentine, of Fall River, and Joseph Butler, of Providence. Its first business was the manufacture of iron hoops for binding oil casks for the New Bedford trade. Starting with a capital of eighteen thousand dollars, it accumulated in twenty-five years a capital and surplus of a million and a half dollars wholly from the profits of its business; and meanwhile it had been so prominent in shaping the industrial growth of Fall River as to justify the author of the "History of Fall River," p. 63, in saying: "Up to the year 1859 what might be termed a sort of centralization characterized and directed the progress of industry in Fall River. One business organization, the Iron Works Company, exercised over the enterprise and advancement of the place a recognized power and influence. Prosperous in its own legitimate pursuits, successful in all its outlying projects, numbering among its stockholders the large landowners and leading capitalists, and thus representing, if not itself owning, interests in every productive institution; . . . this corporate Briareus, with the brain of Mercury, for nearly four decades seemed to hold the growing town and city, with all its industries and enterprises, in its hundred arms. That this embrace has been a kindly and fostering one our previous record abundantly witnesses."

For more than twenty years Major Durfee and Colonel Borden were the guiding spirits of the company, and therefore the beneficent guardians of the industrial interests of Fall River. Upon the death of Major Durfee, in 1843, Colonel Borden took up the task alone, and carried it until the inauguration of a new and more general system—when the Union Mills were built—relieved him of his heavy burden. During that period of nearly forty years the Iron Works Company had built the Annawan and Metacomet Mills and the American Print Works, and was an owner in all these enterprises; and was an owner also in the Troy Mills, in the Fall River Railroad, in the Bay State Steamboat Line and in the Fall River Gas Works. That was not all; for it had trained up young men who were qualified to undertake the direction of new mills when they should be started; it had laid the foundation—by its own profitable enterprises—of large fortunes for its stockholders, to be invested again in the undertakings of the future; and it had inspired the whole community with a confidence in the growth of Fall River, and imparted to it a tone of unlimited business courage. A summary of the events of this period and a list of the men who then began, either as employés or as proprietors, to be interested in manufactures, would occupy more space than can be given to them. But the prominence of a few men demands at least a mention of their names. While Richard Borden was managing the development of the general manufacturing interests of Fall River in connection with

the Iron Works Company, Nathaniel B. Borden was clerk and treasurer of the Troy Company; and a few years later Jefferson Borden began his remarkable career of thirty-nine years as manager of the American Print Works. Both Steven and William C. Davol were employed by the Troy Company in the early years of that corporation: they were afterward to become prominent agents in the development of new enterprises. Weaver Osborn began his career in the employ of Andrew Robeson.

Reference has already been made to the establishment, in Fall River, of the calico printing business, which has made possible the vast expansion of the manufacture of a fabric in which the city is pre-eminent. Andrew Robeson, of New Bedford, began to lay his plans for introducing this industry in 1824. In 1826 he set up one of the first cloth printing machines in the United States in one-half of the "satinet" mill erected by the Iron Works Company. In the same year he bought land and began the erection of buildings for the purpose, and the plant was gradually enlarged during the next ten years. Mr. Robeson later took his two sons into partnership with him. The enterprise was highly successful for many years, but the depression of 1848 brought ruin to the firm, and the business was reorganized as the Fall River Print Works. The second print works was started at Globe village in 1829. It passed through numerous changes of ownership until 1858, when it was purchased by the American Printing Company; but it was afterward sold again and converted into a spinning-mill by the Globe Yarn Mills. The American Print Works, now one of the largest and most magnificent establishments of the kind in the world, was organized by Holder Borden, and began operations in January, 1835. It was managed by him until shortly before his death, in 1837, cut short a business career of great activity and brilliancy.

The American Linen Company, incorporated in 1852 for the manufacture of linen fabrics, which changed its production in 1858 to cotton print cloths, was the last mill erected in Fall River before the change of system which marks an important epoch in the history of the city. Mr. Hale Remington went to Fall River in 1833, and entered the drug store of Dr. Nathan Durfee. Dr. Durfee himself became interested in manufacturing, and sold his business to Mr. Remington. He, in his turn, entered into mercantile pursuits, and finally conceived the idea of establishing a cotton-manufacturing business on the basis of small general subscriptions to the shares of a company. He interested David Anthony, then in his seventy-fourth year, in the enterprise, a circumstance which contributed greatly to the success of the subscription to the stock; and Mr. Anthony's excellent management, together with the fact that the time was propitious for the undertaking, made it a highly prosperous business venture. In 1863 Mr. Charles O. Shove was the originator of the Granite Mills, of which he was the treasurer and active manager until his death in 1875. In 1865 the Robeson Mills Corporation was organized, but did not begin operations until 1867. The year 1866 witnessed the formation of the Durfee, Tecumseh, Davol and Merchants' mills. Augustus Chace was the chief promoter and first president of the Tecumseh. The Durfee, named in honor of Bradford Durfee, was originated by his son, who became its first president. The building of the Mechanics' Mills in 1868 completed the second great period in the history of Fall River. The system inaugurated when the Union Mills Company was organized nine years before had become thoroughly popular, insomuch that the stock of the Merchants', having a capital of \$800,000, was taken by about two hundred and fifty subscribers, while no less than three hundred and twenty-eight names were on the books of the Mechanics' as subscribers to its stock of \$750,000.

The city of Fall River had now become the chief cotton-manufacturing centre of the country. In 1870 it could report five hundred and forty-four thousand six hundred spindles in operation. But it was then just upon the eve of an enormous expansion of its industry, which was to double, and more than that, its productive capacity in less than three years. In 1873 it reported one million two hundred and twelve thousand seven hundred spindles. The movement was attended with great excitement, and a speculative fever which has rarely been equalled in New England. The first of the new mills was the Stafford, organized by Mr. Foster H. Stafford, who had begun life as a mill-boy, and had served as superintendent of four mills in Fall River. The Weetamoe, Slade, Richard Borden, Wampanoag, Narragansett, King Philip, Crescent, Montaup, Osborn, Chace, Flint, Border City, Sagamore, Shove, were all organized in the years from 1870 to 1872. The Barnard, formed in 1873, did not begin operations until 1875. During the times when this tremendous addition was being made to the manufacturing capacity of the city, excitement frequently ran very high. The stock of new corporations was taken in many cases as eagerly as are the shares of new mining companies in a district where a rich find of gold has just been made. When the Slade Mill was projected—the first to be erected in the extreme southern part of Fall River—an extraordinary real-estate “boom” took place, and the shares of the Slade Mill itself rose to \$172 before the foundation of the factory was completely laid.* No additions were made to the list of Fall River cotton mills after the organization of the Barnard until 1880, when the Canonicut Mill was incorporated; in 1881, the Globe Yarn Mills, Bourne Mill, and Laurel Lake Mills; in 1882, the Barnaby, which makes fine ginghams; in 1884, the Seaconnet; in 1888, the Hargraves; in 1889, the Cornell; in 1892, the Sanford Spinning Company. The establishment of a factory for the manufacture of sewing thread and yarn by the Kerr Thread Company, a foreign corporation, and the erection of a monster print cloth mill by the Fall River Iron Works Company, belong to this latest period of Fall River manufacturing. The latest corporation to enter the field is the Parker, which dates from 1895 only. A mere list of the enterprises as they have successively come into being conveys no idea of the growth of manufacturing at Fall River. Most of the corporations have added one or more mills to those which they erected at first, by an increase of capital. Of the forty-one spinning companies in the city there are only fifteen which have not at least two mills. One of the most striking events in the recent history of the manufacture was the erection of a huge mill by the Fall River Iron Works Company, a few years ago. This company has already been referred to as for a long period the leader and guardian of manufacturing interests at Fall River. Under its present manager, Mr. M. C. D. Borden, it has become the greatest of all the producers of print cloths in the country. It has two hundred and sixty thousand spindles and seventy-five hundred looms, and supplies the largest single amount of raw material to the immense American Print Works, in which also Mr. Borden is the controlling spirit.

The cotton-spinning and weaving industry, which began in a modest way, by the use of water-power on the stream which gives the city its name, has come to depend altogether upon steam as a motive power; and, thus released from the necessity of occupying a site on the banks of the river, it has overrun the whole territory of the city. There are groups of mills in the extreme north and in the extreme south, along the water-front, along the whole course of the river, and about the lake in the eastern part of the city. There is no other manufacturing town in the country

* Centennial History of Fall River, p. 134.

which even resembles Fall River in the all-pervading presence of its mills. The cotton manufacture, the industries necessarily connected with it, and provisions for the sustenance of those who are employed in the mills, form almost the whole business life of the place. The brokers are brokers in print cloths. The board of trade is composed of mill-owners. The freight brought into the city is chiefly cotton and coal for fuel. The freight carried away is print cloths and calicoes. In the aggregate the mills of Fall River produce enough cloth every year to reach half way to the moon.

It is one of the consequences of the system of industrial growth of the city that the market for the print cloths is close at the door. The American Print Works are an enormous consumer of the goods. The treasurers of manufacturing corporations of other centres reside and transact their business at Boston, New York or Providence. Those of Fall River have their offices in close connection with their mills. It is doubtless largely due to this method of doing business that the capital representing the profits of manufacture has remained at home, and has been reinvested there, rather than in other places.

Fall River has become so great a centre of the cotton manufacture that it hardly has a second. Its two million eight hundred and thirty-three thousand six hundred and ninety-one spindles are more than those of any state in the Union, except Massachusetts, and, if Rhode Island should be left out of the account, almost as many as those of any other three states combined. Forty-one corporations employ directly, in eighty-one mills, twenty-seven thousand nine hundred and fifty-four persons, and their aggregate weekly pay-roll amounts to \$179,575 or at the rate of almost \$9,000,000 a year.*

As Lowell was, fifty years ago, the most perfect type of a factory town, so Fall River has become and seems destined long to be the most conspicuous example of a factory city. In 1890, according to the eleventh census of the United States, the population of Fall River was seventy-four thousand three hundred and ninety-eight. The whole number of persons employed in all manufacturing industries was twenty-two thousand four hundred and six, of whom eighteen thousand eight hundred and forty-nine were employed in the cotton mills. The full significance of the fact that more than one of every four persons living in that great city were factory hands, is not quite appreciated until it is also considered that at least one-fourth of the population consists of children too young to be employed in the mills. The proportion of factory hands to the total population is not substantially different from that which prevailed in Lowell in the days when the farmers' daughters tended the machinery, but all the conditions of life in the city are vastly different from those of the old factory town.

In the first place, the foreign element is greatly predominant. The people of Irish race who formed the largest part of the foreign contingent in the early days of Fall River manufacturing were thrown into a minority long years ago, when factories began to multiply, by English and Scotch mill-hands. After the last great expansion of the industry French Canadians came in by the thousand; and they now form the largest fraction of the foreign population. Differing in habits as well as in speech from the rest of the people, they have made a new complication in the social life of the city. There was never at Fall River the commingling of classes which was formerly quite common in Lowell. Such a mixture would have been agreeable to nei-

* Statistics for April, 1896, from "Fall River and its Manufactories." Compiled by H. H. Earl: Fall River, 1896.

ther of the parties. In recent times the establishment of a system closely resembling that of English spinning towns renders it both unusual and difficult for the men employed in the mills to rise out of their condition. But it does not prevent those of them who have a desire for self-improvement from becoming leaders among their fellows. And there is an opportunity for their children to take positions which imply the beginning of a general movement upward. But circumstances discourage even this movement.

At Fall River the tenement house took the place of the Lowell boarding-house. This was natural, for the family system, rather than the individual system of the more northern region, always prevailed here. Formerly the erection of a sufficient number of tenements to accommodate the families of all the employés, was simultaneous with the building of the factory. This practice has gradually died out. Corporations now leave to others the provision of dwellings for their hands, and many of them have sold or are from time to time selling the tenements which they put up when their mills were built. For those operatives who save money a tenement block is a favorite investment; they rarely buy mill stock. Some of them own their own dwellings—which are not tenement blocks. They have assisted themselves in buying them by means of co-operative banks, as building associations are called in Massachusetts.

Life in Fall River, among the operatives, seems never to have been adequately described by those who have made a study of it. Some of the conditions were set forth in a series of admirable papers in the *Andover Review*,* by the Rev. Dr. W. W. Adams; but the object he had in view did not render necessary the painting of a complete picture of the life of the mill-hands. Nevertheless, that which is within the knowledge of all observers is sufficient for our purpose. During the whole day, except the dinner hour, the streets in the several great factory districts are quiet and almost deserted. At night the tenements and the business streets swarm with shoppers and loungers. There are resorts of all sorts for all tastes. Reading-rooms are provided for those who seek to improve themselves; and on the other hand the liquor shop is open and drives a thriving trade. Throngs of young people of both sexes promenade the streets. The evening is the only free time and all who are not too weary profit by it. The French Canadians are the most clannish element in this very mixed society, and keep much by themselves—with their families or in the shops kept by their fellow-countrymen.

The labor unions have made the men great politicians. They have necessarily caused the discussions and plans to take a somewhat narrow range. The events within the mills, the rate of wages, the prospects of obtaining legislation favorable to labor, these and similar matters are far more interesting to the operatives than the more general questions of state and national politics. The women who work in the mills either do or neglect their family duties in the evening, according to their training and disposition. There is no moral or social oversight over the factory population by the corporations. It would be impossible under present conditions for the corporations to exercise control, and any influence short of control would be nugatory. Warm discussions have taken place as to the real moral state of the Fall River operatives. It seems truthful to say that it is not materially worse, but is certainly no better than that of working people elsewhere, native or foreign. The liquor habit is vastly too common; and its effect, both in impoverishing its victims and in leading to other vice and crime, is the same everywhere. A considerable

* Vol. V. 1886. *The Spiritual Problem of the Manufacturing Town.*

section of the foreign population—the English—is largely Protestant, nominally, in religion, but almost all the Irish and the Canadians are Roman Catholics. The churches of the city do much to benefit the working people and to ameliorate their life. It is a sad fact that the task is a heavy one. And yet—plain as these things are to the eyes of all who will observe them on the spot—it is the boast of the people of Fall River that there is less crime in the city than in any other city of equal population. It seems a paradox, but their statistics support the truth of the statement.

CHAPTER XVI.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

THE DEVELOPMENT OF OTHER MASSACHUSETTS CITIES.



THE difficulties in the way of making a connected history of the cotton manufacture are at no time more apparent than when we have to deal with such a problem as the extension of the industry in the many cities of Massachusetts where it has established itself. Here the manufacture is a slow growth from early beginnings; there it is a sudden creation by a large investment of outside capital. Here we see the large corporation system; there the system of individual or family ownership. Here the possession of abundant water-power has dictated the location of mills; there one can discover no special reason for the choice of a location, and yet great success has attended the enterprise. All these facts, while they compel the treatment of each city by itself, indicate no order in which the several cities should properly be mentioned. The system chosen is, in general, geographical; and the relative importance of the centres of manufacture is not taken into account in arranging them.

New Bedford has long ago surpassed Lowell in the number of cotton spindles employed, and has taken rank as the second cotton manufacturing city of the country. Yet the beginning of the industry on the shore of Buzzard's Bay, at a time when the whaling business was by far the most important occupation in that community, was the result of what may be truly characterized as an accident. The location of factories at tide-water, with reference to abundant supplies of cheap coal, rather than because nature had provided water-power on the spot, was not a novel idea at the time the Wamsutta enterprise was begun. Mr. C. T. James had urged the policy upon manufacturers with great persistency, as has been noted elsewhere in this history. But in southern Massachusetts and Rhode Island—at Fall River in particular—manufacturers had both water-power and access to deep water and good harbors. Consequently the choice of New Bedford as the site of a large factory when there were apparently many other places more available, may be regarded as a bold experiment.

Mr. Thomas Bennett, Jr., was a native of the neighboring town of Fair Haven. He had been employed in a cotton factory in one of the southern states, where he had learned the business sufficiently well to be ambitious to operate a mill of his own. For this purpose he visited New Bedford and undertook to interest the moneyed men of that town in his project. He urged the Hon. Joseph Grinnell, then

the member of Congress for the district, among others, to take a share in his enterprise. Mr. Grinnell listened, and was pleased with the idea. But he did not approve of Mr. Bennett's purpose to build the factory in the south. Why not establish it at New Bedford? he asked. The success of Fall River, then already rising into importance as a manufacturing town, helped the scheme along, both as furnishing to the enterprising men of New Bedford the incentive of rivalry, in promoting the growth of their town, and as promising a good return upon their investment.

The subscription to the shares of the proposed new company was very general, testifying to the interest of the community in the enterprise, and in 1846 the Wamsutta mills were incorporated, with a capital of \$160,000. Mr. Grinnell became president of the company, and Mr. Bennett superintendent of the mill. The first factory was built in 1847. It contained fifteen thousand spindles and two hundred looms. From the very beginning the goods manufactured were the standard shirtings which have been the Wamsutta's specialty and chief product for a period of almost fifty years, and which are certainly as well known by consumers as is the cloth made by any other mill in the world. The Wamsutta is not the only remarkable example of permanence and unchanging continuity of management among the mills of New England, but there is, perhaps, no example more conspicuous. Mr. Grinnell continued to be president of the company until his death in 1885, when he was succeeded by Mr. Andrew G. Pierce, and he, in turn, a few years ago, by the Hon. William W. Crapo. Mr. Edward L. Baker, the first treasurer, was succeeded in 1855 by Mr. Pierce, who has occupied the position ever since; and has, therefore, served thirty years as treasurer alone, and a short time as both president and treasurer. Mr. Bennett was superintendent from 1847 until 1874, Mr. Edward Kilburn from 1874 until 1887, Mr. Edward R. Milliken for a few months only, and Mr. William J. Kent from 1888 until the present time. Thus the three chief positions of responsibility in the corporation have had in all but eight incumbents in forty-nine years. The first cloth was turned out in 1849. A second mill was built in 1854, a third in 1860, a fourth in 1868, a fifth in 1875, and a sixth in 1881. The corporation now operates more than two hundred thousand spindles and about four thousand five hundred looms. It produces a great variety of goods, medium and fine, plain and fancy woven, narrow and wide. But its chief product is still its standard shirtings.

The history of the Wamsutta is uneventful, as the history of all successful corporations and business houses should be. Indeed, the growth of manufacturing at New Bedford has been so quiet and gradual that it has attracted far less attention than that of Lowell manufacturing—a wonder in its day—and less still than that of New Bedford's always busy and often perturbed sister city on Mount Hope Bay. Notwithstanding the large and steady success of the Wamsutta company, twenty-five years elapsed after its organization before a second corporation was formed. In 1872 the Potomska mill began operations. It was in its early days a manufacturer of print cloths, but it now produces fine goods. The Potomska erected a second mill in 1877. The two combined have more than one hundred thousand spindles. The Grinnell Manufacturing Corporation was organized in 1882, and the Acushnet in the same year. All three of these corporations, which have substantially the same spindle capacity, were, in a certain sense, offshoots from the Wamsutta, and the lists of directors still contain many names in common.

In 1883 the New Bedford Manufacturing Company was organized by Mr. William D. Howland and his associates for the manufacture of yarns exclusively. The enterprise was successful, and was followed up in the year 1888 by the organization of the Howland and the City Mills. These three corporations have, altogether,

nearly two hundred thousand spindles. Since that time, that is in the last thirteen years, the Bennett, Columbia, Rotch, Pierce, Bristol, Dartmouth, Hathaway and Whitman mills—eight large corporations, with more than half a million spindles in all—have been organized and set in operation. Most of these mills are spinning mills only, but the Hathaway, Pierce and Bristol are weaving mills also. The Pierce manufactures fine goods; the Bristol is now the only mill in New Bedford producing print cloths.

The total spinning capacity of all the mills in the city is more than a million and a quarter spindles. It may be said that the industry has been more uniformly successful at New Bedford than at almost any other important manufacturing centre. Accessibility by water to markets and sources of supply of material and fuel, a comparatively mild and moist climate, the conservatism which has characterized the management of the mills, the high character of the goods manufactured, and a happy exemption from long and serious labor troubles, have all combined to make the business profitable.

The cotton manufacture in Taunton dates from a very early period. The first factory was erected before the close of the eighteenth century. In 1806 it passed into the hands of Silas Shepard, who associated with himself Samuel Leonard and Samuel Crocker, and erected the "green mill" on Mill river near the site of the present bridge at the junction of Mill and Weir streets. In those times of non-intercourse with Europe there was a quick demand for yarns, which were woven in the neighborhood into checks, gingham and tickings. In 1818 an addition was made to the mill, and power looms of clumsy pattern were introduced. The hard times which followed the close of the war with Great Britain and the disadvantages of poor machinery made the mill unsuccessful, and manufacturing was abandoned. In 1807 Crocker, Bush and Richmond, who had established themselves on Mill River at Whittenton, and built a nail mill, added a story to the mill and put in spinning machinery. The yarn was taken out by the families of farmers living in the region, to be woven on hand looms. The building was burned in 1811, but was immediately replaced by another, of larger size, wholly devoted to spinning. A few years later forty power looms were added, "and this was the first mill in this region, it was said, which made good cloth by the power looms." * In 1818 Richmond erected a mill at Hopewell, something less than a mile below Whittenton, the basement of which was occupied as a nail mill. In 1821 a second Hopewell mill was built by Mr. Richmond. In 1823 Mr. Crocker, of the Whittenton enterprise, and Mr. Richmond, of the Hopewell mills, purchased a site and mill privilege, and erected what was known as the "brick mill," for the manufacture of printing cloths for the calico works then just established. In the same year the Taunton Manufacturing Company was organized, and consolidated all the properties heretofore mentioned. Its capital was two hundred thousand dollars, and its shareholders were Messrs. Crocker and Richmond and a group of Boston gentlemen, including Edmund Dwight, Harrison Gray Otis, Israel Thorndike and William H. Prescott. For some years the company was quite successful. The print works were operated by skilled workmen imported from England and Scotland. But afterward the business became unprofitable, and the Manufacturing Company began to go to pieces. In 1833 it was voted to close the print works and sell the property. In 1834 Mr. Richmond retired from the company, and took the "brick mill" and all its belongings as his share. In 1835 J. K. Mills & Co., of Boston, who had become shareholders, also retired and took the Whittenton

* History of Bristol County, p. 823.

mill. The financial troubles of 1837 were felt heavily by the Taunton manufacturers, and gradually the property of the company was sold, exchanged, or lost to creditors, until 1844, when the company went out of existence.

Of these several enterprises only two remain to the present time. When James K. Mills and Company took over the Whittenton mill in 1835, they employed Mr. Willard Lovering as agent. Mr. Lovering had had charge successively of a mill at Franklin, of the works of the Blackstone canal at Providence, and of the Carrington mill at Woonsocket, and had proved himself a capable and successful manager. He remained at the head of the mill until the financial crash of 1857 caused the failure of Mills & Company, when he and his sons purchased the property, and proceeded to enlarge and improve it. A short time before his death, in 1875, his three sons became full owners, and have ever since carried on the Whittenton Mills with great success. They make a large variety of goods. Indeed, in the great weave rooms of the Whittenton Mills, it is said, more fabrics and patterns are woven than in any other room in the country. Taunton has had its share of the growth of the cotton manufacture in southern Massachusetts. Although there are no monster mills in the city, the factories are numerous and there is a steady increase. The Canoe River Mills were built by the late John C. Sharp, and are owned wholly by his sons. The Elizabeth Poole Mill, which makes cotton flannels; the Cohannet, the largest corporation in Taunton, with seventy-two thousand spindles, which makes hosiery yarns; the Nemasket; the Corr; the Hopewell; the Eagle; and the Oakland: together with those already mentioned, contain an aggregate of more than a quarter of a million spindles, and render Taunton, by the variety and magnitude of its manufactures, one of the most interesting seats of the industry.

The building of Lawrence was a direct consequence of the creation of Lowell. It was foreseen and predicted, almost as soon as the success of the Lowell venture was assured, that the lower falls of the Merrimack would be utilized for manufacturing. But it was sixteen years after the founding of Lowell when the first step in that direction was taken. Surveys made under the direction of the Merrimack Canal Company—incorporated in 1820 for the purpose of making the Merrimack navigable between Haverhill and Lowell—demonstrated the practicability of a large development of water-power at Bodwell's Falls (Lawrence); but nothing was done. In 1837 Daniel Saunders, the only person living in the region who seems to have appreciated the value of the water-power, bought the right to Peters's Falls, above the present city of Lawrence. In 1843 he, in conjunction with Samuel Lawrence, treasurer and financial agent of the Middlesex Mills at Lowell, John Nesmith, and several other gentlemen, formed the Merrimack Water-Power Association. Mr. Lawrence became president and treasurer, and Mr. Saunders agent. The land lying about Bodwell's Falls was quietly purchased, or bonded. In 1845 a charter was granted to the owners of the property so acquired, under the style of the Essex Company, with extensive powers of constructing a dam, and the necessary locks and canals in connection therewith, to remove obstructions in the river, and to create a water-power to use, sell or lease, for manufacturing and mechanical purposes. By this time the leading men of the Lowell enterprise had been aroused to a deep interest in this new scheme. So great was their interest, indeed, that they assembled at the state house on the morning after the act of incorporation was passed, witnessed the signature of the act by Governor Briggs, and started immediately by rail for North Andover, and thence were conveyed in carriages to the site of the future city.* It was a distin-

* History of Essex County, p. 213.

guished company. It included Abbott Lawrence, William Lawrence, Samuel Lawrence, John A. Lowell, Francis C. Lowell, Nathan Appleton, Theodore Lyman, George W. Lyman, Patrick T. Jackson, James B. Francis, and Charles S. Storrow. After an inspection of the situation, an offer of thirty thousand dollars was made to the water-power association for all the land and rights acquired. The proposition was accepted. Two days afterward the subscription books were opened for the capital stock of one million dollars. It was speedily taken—nearly one-half of it by gentlemen who have already been named. The company was organized in April, 1845, with Abbott Lawrence as president, and Charles S. Storrow as treasurer and agent.

The population of the territory now constituting the city of Lawrence was then less than two hundred, but the rush thither of workmen and others attracted by the new enterprise was almost as great as it is in our day to a new mining camp. The similarity does not end there, for a condition of lawlessness prevailed for a period of almost two years, until a permanent community was formed and gained control of the mixed population which first obtained employment. The splendid great dam was exactly three years in building, and was finished in September, 1848. The town of Lawrence, named in honor not of one, but of the three brothers who were so prominent in the enterprise, was incorporated in 1847. The territory was taken from the towns of Andover and Methuen. It grew so rapidly that in 1853 the city of Lawrence was chartered.

Although the original purpose of the projectors of Lawrence was to establish a new cotton-manufacturing centre, circumstances have dictated the employment of the great water-power chiefly in the manufacture of worsted goods. The first companies incorporated, in 1846, to be located at Lawrence, were three cotton-manufacturing companies and a bleachery. One of the mills and the bleachery were never built; and the first actual application of power was upon the great wheels of the Bay State Mills (now the Washington Mills). The history of manufacturing in Lawrence should accordingly be written in connection with the woollen and worsted industry, and this account will, therefore, be confined to the cotton manufacturing corporations.

The Atlantic Mills were chartered in 1846. Two mills were erected and began production in 1849. A third mill, connecting the two, was begun in 1850 and completed in 1852. Abbott Lawrence was the first president. The company manufactures sheetings and shirtings. The Pemberton Company was chartered in 1852, the Lawrence Duck Company in 1853, and the Everett Mills in 1860. These are all the corporations of Lawrence engaged exclusively in the production of cotton goods. The textile industry in Lawrence has been subject to great fluctuations and to many business reverses. The dreadful disaster at the Pemberton Mills, January 10, 1860, was an almost unexampled calamity, involving the loss of nearly a hundred lives and the total destruction of the mill. The Atlantic Mills went through a severe crisis in 1876, resulting in a scaling down of the stock seventy per cent. The Everett Mills also at one time suffered reverses not so important. In general it may be said that while in recent years the cotton manufacture in Lawrence has been successful and prosperous, it has been—taking the whole period of its existence together—less so than in some other centres. No new corporations have been established in the last thirty-five years, and the enlargements have been unimportant. There are, in all, about four hundred thousand cotton spindles in the city, including those in the Pacific and Arlington Mills, whose chief business is the manufacture of worsted goods.

The Naumkeag Steam Mill, at Salem, which was built in 1848, and the Peabody Mill, at Newburyport, successor of the Globe Mill, are the only still-operated survivors of a group of mills which have an interesting history. They were the result, as is mentioned elsewhere, of the warm championship by Gen. Charles T. James of the idea that a mill operated by steam-power at a point on the coast where cotton and coal could be brought by water almost to its doors, was more economical than one operated by water-power in the interior, no matter how abundant and convenient that power might be. There was an exceedingly warm controversy over this question of economy. True as General James's principle has proved itself to be at Fall River and New Bedford, the experience of the mills on the coast north of Boston was not such as to justify it. The James, Bartlett, Ocean and Globe mills, at Newburyport, the Portsmouth, afterwards known as the Kearsarge, at Portsmouth, N. H., and the Naumkeag, at Salem, were all built between 1843 and 1855, under the inspiration of General James's idea. Some of them were moderately successful, the Naumkeag eminently so. But one after another was destroyed by fire, or became too unprofitable to be operated, and the enterprise was abandoned; and no burned mill of this group was ever rebuilt.

Manufacturing began on the Chicopee River, in what was then Springfield, but is now the city of Chicopee, as long ago as 1822, when the Chicopee Manufacturing Company was organized. This company is still in vigorous existence, and operates nearly seventy-five thousand spindles. In 1831 the Springfield Canal Company was organized, and one year later the Cabot Manufacturing Company was chartered, March 20, 1832. It was named in honor of Samuel Cabot, an eminent merchant and manufacturer of Boston. On March 10, 1836, a charter was given to the Perkins Manufacturing Company, which took its name from Mr. Thomas H. Perkins, another Bostonian of great wealth and enterprise. The Dwight Manufacturing Company, named in honor of Edmund Dwight, a merchant of Springfield, came into existence February 6, 1841. In 1851 the Cabot and Perkins companies consolidated as the Perkins, and in 1856 the youngest of the three companies gave its name to a consolidation of all three. At that time the several companies owned seven large mills, and the increase since then has been great. During the first twenty years of manufacturing at Chicopee, all the mills were under the management of Mr. James K. Mills, of Boston, as treasurer. From 1852 to 1876, the position was filled successively by Franklin H. Story, D. N. Spooner and Charles W. Freeland. Since 1876 Mr. J. Howard Nichols has been treasurer. Under his administration the Dwight has entered the field as a southern manufacturer, by erecting a large mill at Alabama City, Ala., which is now in successful operation. The Dwight has one hundred and thirty thousand spindles at Chicopee, and thirty thousand in Alabama.

The cotton-manufacturing industry at Holyoke is far outstripped in importance by that of paper-making. But the original plans of those who began the development of the water-power of the Connecticut at that point contemplated the creation of a great textile manufacturing city. The Hadley Falls Company, an enterprise in which J. K. Mills & Co., George H. Lyman, Ignatius Sargent, Patrick T. Jackson, and other prominent Boston capitalists engaged, undertook the erection of a dam and the construction of a canal; and followed up this work by putting up large cotton factories, which were built in 1848 and 1849. The dam was carried away, and the enterprise was, in other respects, not successful. Accordingly, it was determined to separate the different kinds of business and reorganize. Two cotton-manufacturing corporations, the Hampden and the Lyman, were created to take over the factories; and

stock in them was distributed to stockholders in the Hadley Falls Company. The locks and canals property it was determined to dispose of by auction, the understanding being that it would be bid in by Mr. Lyman, representing the rights of stockholders. A sum was agreed upon at which the water privilege should be bid in. But the plan went awry. At the time of the sale, when Mr. Lyman had made his bid of the sum agreed upon, a Mr. Smith, of Hartford, Conn., made a higher bid. There was no opportunity for consultation. Mr. Lyman did not venture to advance his bid on his own responsibility, and the property was sold to Mr. Smith. It was this *contretemps* which resulted in the loss of the Holyoke water-power by Boston men, and in the abandonment of the plan of creating a second Lowell on the Connecticut.

The Hampden mills became bankrupt, and their buildings were disposed of and devoted to other uses. The Lyman mills, organized in 1854, has had a career of more than forty years of uninterrupted prosperity. It is one of the few New England mills that have never suffered any reduction of capital, and its dividends have been steadily maintained. It became a pioneer in the manufacture of fine goods. Thirty-three thousand spindles,—more than one-half the original capacity of the company,—and four hundred and fifty-four looms were set apart for the production of fine lawns. Mill No. 1 has always produced sheetings and other medium goods that are shipped to all parts of the world. The yarn spun for lawns in Mill No. 2 was much finer than was then produced in any mill in the country, No. 85s being the finest. By improvements in machinery, and by other influences which it is needless to specify, the price at which these goods are disposed of is barely one-fourth that which they commanded thirty years ago. The corporation has steadily increased its capacity until now it has about one hundred and fifteen thousand spindles, and produces more than double the original product, and is to-day equipped with combing machinery and all the latest improvements, and produces yarns as high as No. 150. There is, it is said, but one mill in the United States which spins and weaves yarn of as high counts as the Lyman.

Cotton manufacturing has established itself in the extreme northwestern corner of Massachusetts, not without many vicissitudes and discouragements. There is in the three towns of Adams, North Adams and Williamstown one mill only of large capacity, but there are many factories of small size. The beginning of the industry dates back to 1811 when the "Old Brick" mill was built at North Adams. In this, as in the second mill—the "Eagle"—built in 1813, the leading spirit was Giles Tinker. These factories ceased, with all others in the country, to be profitable after the close of the war with England; but they were operated fitfully, the Eagle mill until it was burned in 1845, the "Brick" mill until 1857. In the middle period of manufacturing in this neighborhood the leaders were the brothers Arnold, who came to North Adams from Natick, R. I. Harvey Arnold, one of the three brothers, was a most prominent man in the community. He established the Arnold print works, but not long afterward he became involved financially, and the control passed into the hands of Mr. A. C. Houghton, where it has ever since remained. The Berkshire Mills, established in 1889 at Adams, are much the largest in the region. In the aggregate there are about two hundred thousand spindles in the three towns. The production of gingham is a special feature of this group of mills; those which are not employed in this branch of the trade produce print cloths, which are printed at the Arnold works. The Berkshire Mills make sateens and fine goods.

Beside the mills in the larger cities, there is one which cannot be omitted from a list of factories which have played a part in the development of the great cotton industry—the Lancaster mill, at Clinton. Its projector was one of the most distin-

guished American inventors of textile machinery, Mr. Erastus Brigham Bigelow. The two brothers, H. N. and E. B. Bigelow, removed from Shirley, Mass., to Clinton, in 1837, and the younger brother, Erastus, had already invented two power looms, one for the manufacture of quilts and the other for coach lace, when they determined to erect a large gingham factory. On February 5, 1844, Erastus B. Bigelow, Stephen Fairbanks and Henry Timmins, and their associates, were incorporated as the Lancaster Mills, with a capital of half a million dollars. Work was immediately begun for the erection of what became in its time the largest gingham mill in the country. It was at first proposed to make only blue and white cotton checks, but Mr. Bigelow undertook to devise a power loom for weaving ginghams. He devoted himself so assiduously to the task for two years that his health gave way, and he was compelled to seek rest in foreign travel. Nevertheless he had accomplished his undertaking. The looms were set up and were successful. Mr. H. N. Bigelow took the management of the mill and continued in charge until 1849. The enterprise was highly successful, and at about the time Mr. Bigelow retired from the management the capital of the company was increased to \$1,200,000. The great weave-room, covering one and a third acres of ground, and containing six hundred looms, was the largest in the United States, and was one of the wonders of its time. The goods manufactured achieved a high reputation and became known not only in this country, but in many other parts of the world. The wise policy of establishing a standard and adhering to it has made the Lancaster Mill one of the best factories for studying the development of the cotton industry and its condition from time to time. The mills have always been closely managed, and they have been almost uniformly successful during the half century they have been in existence. Mr. Harcourt Amory, of Boston, has been treasurer of the Lancaster Mills for several years.

CHAPTER XVII.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

NEW HAMPSHIRE AND MAINE.



THE beginning of cotton manufacture in New Hampshire was a direct consequence of the Slater enterprise at Pawtucket; its later development was a result of the successes at Waltham and Lowell. In 1804 Charles Robbins, who had been in the employ of Samuel Slater, went to New Ipswich, New Hampshire; interested Charles Barrett, one of the most prominent men of the town, in a scheme to engage in cotton manufacturing; and built a small mill, about the size and on substantially the model of the Slater mill, on the bank of the Souhegan river. The mill went into operation on the 15th of December, 1804. In 1805 the New Hampshire Legislature passed an act exempting the mill and machinery from taxation for five years. Mr. Robbins sold one-half of his interest in the mill in December of the same year, and there were other transfers of the property later. The mill was moderately successful for a few years, but was afterward abandoned, as a total loss. It is noteworthy that in 1810 Mr. Samuel Appleton, a native of New Ipswich, and a brother of Nathan Appleton, who was in after years so closely identified with the manufacture of cotton at Waltham and Lowell, became one of the owners of this first New Hampshire mill.

Mr. Appleton, with others, was incorporated as the New Ipswich Water Loom Factory, and a new building was erected on the site of the old mill. The same water privilege is now occupied by one of the mills of the Columbian Manufacturing Company. In 1807 Daniel Brooks, of New Ipswich, who had been employed in the Barrett & Robbins Mill, built the second factory in New Hampshire, near the first, but below it on the same stream. The importance of this factory arises from the fact that before the mill had been in operation many months Samuel Batchelder became the owner of an interest of one-third. Mr. Batchelder at once took an active part in the business of the mill, and soon had virtually the whole management in his hands. He thus began a career in the cotton-manufacturing industry which is quite unique in the history of the trade. His connection with the enterprises at Lowell, Saco and other places, is referred to elsewhere. There were other early factories in New Hampshire at Hillsborough, Jaffrey and Peterborough, but the history of these enterprises must be passed over.

The river Merrimack, and its tributary the Nashua, with their splendid water power, are the chief seat of the manufacture in New Hampshire, in the cities of Manchester and Nashua. Besides the factories in the Merrimack valley, however, there is a group of mills nearer the coast, at Dover, Exeter, Newmarket, Salmon Falls and Great Falls. Nearly all the mills mentioned are enterprises of many years' standing. They are owned and operated by corporations, like the Lowell Mills, which have their business headquarters in Boston. They represent almost the whole spinning capacity of the state. The growth of the manufacture in New Hampshire during the last half century has been largely by the enlargement of operations by existing corporations; and hardly a new company has been organized in the state since the close of the Civil War.

The third mill in the state was erected at Manchester in 1809. It was built and partially owned by Benjamin Pritchard, who was the house-wright of the first New Ipswich mill. It was thus indirectly and not very remotely due to the enterprise of Samuel Slater, who, a few years later, became directly interested in it as one of the founders of the Amoskeag Manufacturing Company. The mill erected by Pritchard, together with Ephraim, David and Robert Stevens, had about five hundred spindles and ten looms. The owners became incorporated in 1810 as the Amoskeag Cotton and Woollen Manufacturing Company. Their mill was prosperous not only during the war period which followed, but afterward, up to the time of their selling it in 1822. The purchaser was Olney Robinson, of Attleborough, Mass., who was furnished with funds for the purpose by Samuel Slater. Mr. Slater had made a trip to the place, by way of Lowell, a few months before and had been highly pleased with the situation. Mr. Robinson was not very successful, and in 1825, by a succession of transfers, the property, including an unfinished mill, became the possession of Samuel Slater, Oliver Dean, Lyman Tiffany, Willard Sayles, Larned Pitcher and Ira Gay. Mr. Gay was the only citizen of New Hampshire in this list; Mr. Slater lived in Rhode Island; the other four were residents of Massachusetts. They called themselves the Amoskeag Manufacturing Company, although a charter under that name was not granted until 1831.

The partners began immediately to increase the facilities of manufacturing, by completing the unfinished mill, which became known as the "Bell Mill," the first mill being known as the "Island Mill." In the Island Mill was begun at this time the manufacture of the fabrics which soon acquired the highest reputation as the "A. C. A. tickings," and which have been well known in the market for more than seventy years. Upon the incorporation of the Amoskeag Company, Lyman Tiffany

became president and Oliver Dean treasurer. Already a grand and far-seeing policy had been determined upon. The company proceeded to purchase land all along the river, but chiefly at Manchester and on the east side of the Merrimack, where were the best sites for mills and the best locations for canals. Before 1837 it had become the owner of all the water-power on the river from Manchester to Concord, together with large tracts of land where now the city of Manchester stands. In 1837, William Amory, of Boston, who was already the treasurer of the Jackson Company, at Nashua, was chosen treasurer of the Amoskeag, and then began a period of progress, enlargement and extension, which has continued to the present time. The plans had already been made for the construction of new canals and the improvement of the dam; and Mr. Amory not only carried out these plans, but conceived and executed others with rare ability and tact. He held the office of treasurer until 1876. During his incumbency of thirty-nine years he saw a marvellous growth of the company. When he became treasurer the company operated but eight thousand spindles. When he retired from the position it operated one hundred and thirty-nine thousand spindles. In the same time the stockholders had received a yearly average dividend of eleven per cent. on their shares, and the company had besides accumulated a quick capital of more than two million dollars. During almost the whole of this time Mr. Amory had a most able coadjutor in Ezekiel A. Straw. Mr. Straw went to Manchester in 1838—a young man of nineteen years, just out of Phillips Andover Academy—to take the place, temporarily, of the civil engineer of the company, who was ill. Expecting at the time to remain but a few weeks, he began a service which lasted almost forty-one years, first as civil engineer, then as agent of the land and water-power department, and finally as agent and general superintendent of all the works of the company in Manchester. The company thus had at its command the splendid courage, the far-seeing wisdom, the fine executive ability and the comprehensive technical knowledge necessary to make the enterprise successful, and these two men, each in his own office, built the foundations of prosperity deep and well.

The first work was to build a new dam across the Merrimack, for up to this time there had been a wing-dam only, extending half-way across, and to construct the two great canals which convey the water to the mill-wheels. The town was laid out on a comprehensive scale, with numerous reservations for public grounds and public buildings. In 1838 the first land was sold for manufacturing purposes to the Stark Manufacturing Company, and the Amoskeag Company built for that corporation its first two mills. Meanwhile its own manufacturing operations were conducted in three old wooden mills. But when one of these was burned, in 1840, the Amoskeag Company created a new department of its business, known as the "Amoskeag new mills," and erected two mills on the east side of the river for its own use. From that time the growth of the company has been in the enlargement of its cotton-manufacturing business. Mill after mill was erected, until the water-power available for turning wheels was exhausted. This stage had been reached when Mr. Amory resigned the treasurership in 1876, and became the president of the corporation. Mr. T. Jefferson Coolidge succeeded him as treasurer, and with two brief intervals, one of which was while he was serving as United States minister to France, has continued to fill the position to the present time. The new administration answered the fears of those who supposed that the limit of manufacturing at Manchester had been reached when the water-power was all employed, by erecting new mills to be operated by steam; until, at the present time, the steam-power available in Manchester for turning cotton spindles is more than twice the power of the river at its full capacity. The Amoskeag has become the greatest cotton-manufacturing corporation in the land. It

has twelve principal mills, containing three hundred thousand spindles and ten thousand looms, and its employees number seven thousand five hundred persons. Its average production, exclusively of cotton goods, is more than two and a quarter million yards a week. Its fabrics, beside the tickings already referred to, comprise a great variety of gingham, denims and fine goods. It has been, throughout its history, fortunate in having the services of strong and experienced men, and it is a monument of their courage and business skill.

The corporation known as the Stark Mills was a child of the Amoskeag Company. It was organized and officered largely by the stockholders of the parent company. The prominent men in the Lowell enterprise were already interested in Manchester. Mr. Nathan Appleton was the first president, and Mr. William Amory was the treasurer. As has been stated, the company was chartered in 1838, and in that and the following year the Amoskeag Company built two mills for the new corporation. Its history calls for no special notice. It has always been a manufacturer of coarse goods, its product of duck and seamless bags being very well known. In the early days of the company it was a manufacturer of linen as well as cotton. The Manchester Mills, incorporated in 1839, for the production of dress goods is properly to be considered as a worsted mill, although it has a large number of cotton spindles, and produces print cloths. The Langdon Mills was chartered in 1857, but was not organized until 1860. It had two large mills, which, together with all the other property of the company, were transferred, in 1887, to the Amory Company. The stockholders of the Langdon received shares of the stock of the Amory, and the two corporations were thus consolidated. The Namaske Mills, organized in 1856, as the Amoskeag Duck and Bag Mills, took the name of Namaske in 1866. In 1875 it was united with the Amoskeag Company. The Amory Manufacturing Company was chartered in 1879 for the production of fine and medium shirtings, sheetings and jeans. It was the last important cotton-manufacturing company organized in Manchester. By the successive enlargement of the several mills named the spindles of Manchester have been increased to more than five hundred and fifty thousand, a number which gives it rank as the fifth city in importance in the cotton industry in the United States.

The beginning of cotton manufacturing at Nashua was later than its origin at Manchester; but Nashua had already two large corporations when the systematic development of Manchester began. The enterprising citizens of Nashua, observing the great work at Lowell, only a few miles away, conceived the idea of imitating that success. Accordingly, in 1822 and 1823, they formed an association and purchased land and water privileges. In 1823 they were incorporated as the Nashua Manufacturing Company. It is interesting to note the fact that while the stock subscription books were open Daniel Webster made a visit to Nashua, and was so interested in the scheme that he subscribed for sixty shares—of \$1000 each—one-fifth of the whole capital stock. But Mr. Webster never paid for the shares. They were taken by a wealthy Boston family, in which, it is understood, they are still owned. In fact the Nashua enterprise succeeded because Boston capitalists, some of them already interested in the Lowell Mills, invested their money and assumed the management. Mr. William Amory was the first treasurer of the company. The Jackson Company was incorporated in 1828, and purchased and occupied the mills built two years before by the Indian Head Company, which had been unsuccessfully engaged in the manufacture of woollen goods. The Nashua and Jackson companies have long been under substantially the same management, and are engaged in the manufacture of fine sheetings and shirtings. They have, together, about one hundred and forty thousand spindles.

There is, in the extreme eastern part of New Hampshire, a group of mills which should be mentioned briefly, as some of them have played a part in the development of the cotton industry. One of them, now the Cocheco Mill, of Dover, was among the very earliest to produce calico prints. The Dover Cotton Factory was incorporated in 1812, with a capital of \$50,000. In 1825 the name was changed to the Dover Manufacturing Company, and the capital was increased to \$1,000,000. Two years later it became the Cocheco Manufacturing Company. It anticipated the Merrimack Company by a short time in the manufacture of prints. It has at present four large mills, containing one hundred and fifteen thousand spindles, and a print works with fourteen printing machines. The Newmarket Manufacturing Company, incorporated in 1823; the Great Falls Manufacturing Company, chartered in the same year; and the Salmon Falls Manufacturing Company, organized in 1822, have all been largely instrumental in giving prosperity to the communities of southern New Hampshire. One mill at Portsmouth was built in accordance with the theory of Mr. C. T. James, that access to tide-water, and thus to cheap coal, was preferable to the possession of water-power. Mr. James's principle was not true when it was propounded, but in these times it is true, as the experience of Fall River, New Bedford and other places proves abundantly. The Portsmouth Mill was never more than moderately successful. It was burned in December, 1880, and was not rebuilt.

The mills at Suncook, in the town of Pembroke, have an interesting history. In or about 1830 Samuel Appleton, a resident of the town, built a small batting mill at this place, where it is said the first glazed wadding ever made in the country was produced. But long before that, in 1811, there was the beginning of a spinning industry which has continued to the present time, although it was an enterprise of little importance until just before the beginning of the Civil War. In the year just mentioned the Pembroke Cotton Factory Company was organized, and a small spinning mill was built. The property soon passed into the hands of Major Caleb Stark, a son of General John Stark, of Revolutionary fame. It then became the Pembroke Cotton and Woollen Factory Company, and so continued until about 1840, when the Stark family sold the property. The ownership then passed through several hands, and the enterprise was not at all successful until about 1845, when the firm of Nichols & Brownell came into possession. They took down the old mill, and built a larger and better one, which, with much other neighboring property, was acquired in 1847 by the Suncook Manufacturing Company. This corporation was, in turn, succeeded in 1855 by the Pembroke Mills Company. The Nichols & Brownell Mill was burned in 1859, and in 1860 the new Pembroke Mill was erected, with twenty thousand spindles. In 1862 the Webster Manufacturing Company was incorporated, and built a mill of thirty-six thousand spindles in 1865. The China Manufacturing Company received its charter in 1867, and in the following year built a mill of forty-five thousand spindles. They are all producers of print cloths. While the three companies are entirely distinct, and each owns its mill, they are and have always been under identical management. Mr. B. Rodman Weld, of Boston, has for many years been the treasurer.

The cotton manufacture has built up in Maine two large towns—Lewiston on the Androscoggin river, and Biddeford on the Saco, and forms the chief manufacturing industry in several other places: Augusta, Waterville, Brunswick and Saco. It has followed the lines of development observed in northern Massachusetts and in New Hampshire: the mills are, without exception, located at the falls of large rivers and are operated by water-power; and they are the creation of Boston capital, concentrated in large corporations. The part these mills have played in the development

of the cotton industry generally has not been especially conspicuous, nor yet wholly insignificant. But they form an essential part, or a natural consequence, of the enterprise begun at Waltham and continued at Lowell, Lawrence, Manchester and Nashua.

The first cotton mill built in Maine, about 1809, was situated upon the Androscoggin river at Brunswick ; little is known in regard to it, and its success was not great. The first modern mill was built at Saco, and is now known as the York Manufacturing Company. It was built by gentlemen interested in the Lowell and Lawrence mills, and derives its chief interest from the fact that Mr. Samuel Batchelder, often mentioned in this history, came hither from Lowell and took the management of the company when it was organized in 1831. The ownership of the York Mills and of the Everett Mills at Lawrence has long been substantially the same, and the treasurership of both companies is, and for many years has been, held by the same person. Mr. Batchelder was prominent in the organization of the Laconia Mills, in 1845, and of the Pepperell Mills, in 1850, both of which were located at Biddeford, just across the river from Saco, and making use of the same fall of the Saco river as the York Mills. The Pepperell and Laconia Mills, with their attendant industries, have brought a large population to Biddeford. They are among the most prominent exporters of goods in the country, and their products are known and esteemed in many lands.

Lewiston is the largest cotton-manufacturing centre in the state. The woollen manufacture was established at the Lewiston Falls as early as 1859. The first cotton mill—a small affair—was built about 1844. Meanwhile, in 1836, a company had been organized to develop the water-power at this place, which was at first known as the Great Androscoggin Falls Dams, Locks and Canal Company, but which assumed, in 1845, the more modest appellation of the Lewiston Water Power Company. Between these two dates the company had erected a wooden dam and constructed a small canal. In 1845 a company was chartered under the name of the Lewiston Falls Cotton Mill Company to erect a small factory with about five thousand spindles. Before the mill was completed it was sold to the Water-Power Company. The change of name by the Water-Power Company, just mentioned, and the purchase of the unfinished cotton mill, took place upon the occasion of an accession of new capital to the enterprise and the assumption of the management by Boston men, the leader of whom was Mr. Benjamin E. Bates. The dam, locks and canal were enlarged and greatly improved; and the company began the construction of a mill for the manufacture of fine goods. Soon after it was completed a stock dividend was made to the shareholders of the Water-Power Company to the amount of the value of the new mill, and the Bates Manufacturing Company thus came into being in 1850. The effect of the stock dividend upon the financial condition of the Water-Power Company was so serious that in 1857 the whole property was transferred to the Franklin Company, which is still the owner of the water-power. At present the stock of the Franklin Company is owned wholly by the several Lewiston corporations. Mr. Bates continued to be the leading spirit of the whole enterprise for many years. Associated with him were Lyman Nichols, George L. Ward, Josiah Little, and other gentlemen of property ; while the house of Francis Skinner & Co., of Boston, was the selling agent for the Lewiston Mills. Additional mills for the Bates Company were erected in 1854, 1865, 1882 and 1892. Mr. Bates introduced in these mills the manufacture of Marseilles quilts, the first ever woven in the country, which have ever since been a prominent article of manufacture by the Bates Company, and bear a wide reputation. In 1850 the Hill Manufacturing Company was incorporated, and its first mill went

into operation in 1854. A second mill was erected in 1864. The Lewiston Mills were chartered in 1853, and began operations the same year. The Androscoggin Mills were incorporated in 1854, and began to manufacture goods in 1860. This company now has three mills, the first and largest of which is a monster building 74 by 542 feet, with two wings, each 48 by 100 feet, and four stories high. The Continental Mills were incorporated in 1865, and purchased the Porter Mill, erected in 1858. It was enlarged to a capacity even greater than that of the Androscoggin. Since that time the only new corporation at Lewiston is the Avon, a weaving mill only, which was established in 1882 for the manufacture of quilts. In 1895 the several Lewiston companies had an aggregate capacity of nearly 300,000 spindles.

One of the most important events in the history of Lewiston spinning was the employment of David Whitman as "mill doctor" by a combination of the Pepperell and Laconia companies, of Biddeford; the Naumkeag, of Salem, and the Lewiston Water-Power Company. Mr. Whitman was the first to introduce in New England the mathematics of spinning, which was already well understood in England. Before Mr. Whitman's time changes in the rolls were made by experiment, when it was desired to adjust them to the production of a different number of yarn from that to which they were already adjusted. Mr. Whitman brought into use the formulæ which enabled spinners to make the change precisely and at once. Another noteworthy event was the employment of Mr. Cyrus I. Barker, by Mr. Bates, in 1868, to take charge of the Bates Mills. Mr. Barker invented and patented a special process for bleaching Marseilles quilts which enabled the product of these mills to compete successfully with the French article.

The history of Lewiston manufacturing has been by no means one of uninterrupted success. The failure of Francis Skinner & Co., and the involved condition in which the estate of Mr. Bates was found to be, at his death, brought seasons of extreme peril to all the enterprises; and the Continental Mills have passed through a period of great misfortune.

The first cotton mill at Augusta was built partly by Boston capital and partly with the proceeds of a strong local effort to raise money for the development of the magnificent water-power of the Kennebec river at this point. The mill was operated successfully for many years. In 1865 a movement was originated by John L. Stevens—then editor of the leading newspaper of Augusta, and afterward famous as Minister to Hawaii at the time of the revolution in the islands—to invite outside capital and build up a great manufacturing city. The project was warmly supported by Mr. James G. Blaine, then in his second term as a member of Congress for the Kennebec district. The attention of Governor William Sprague, of Rhode Island, to the advantages of the situation, was secured, and negotiations began for the transfer of the property of the Kennebec Company, with its dam and cotton mill, to the A. & W. Sprague Manufacturing Company. Land was bonded to a very large amount on both sides of the river, but there was a wide difference between the price at which the property was held and the sum which the Spragues would pay. Authority was asked from the Legislature and granted, to issue city bonds to the amount of two hundred and fifty thousand dollars to pay this difference. The voters accepted the act by a vote of more than twelve to one, and in 1867 the transfer was made. It was virtually a gift of a quarter of a million dollars to the Spragues to engage in the enterprise. The most magnificent expectations were raised; but, as is frequently the case, they were doomed to failure. One new mill only had been erected by the Spragues when their own failure came in 1873, and the whole grand scheme tumbled to pieces. The property was a part of that included in the Chafee assigneeship, else-

where noticed. Ultimately it was disposed of to Boston capitalists, by whom the successful Edwards Manufacturing Company was organized in 1882.

There is one large corporation at Waterville, where the Kennebec river furnishes another magnificent water-power. It is noteworthy chiefly for bearing the name—the Lockwood Manufacturing Company—of Mr. Amos D. Lockwood, who was a very prominent and successful practical manufacturer in the employ of the Lewiston corporations, and who had at various times large interests of his own in Rhode Island and Connecticut factories. The Cabot Manufacturing Company has two large mills at Brunswick, on the lower fall of the Androscoggin river.

CHAPTER XVIII.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

RHODE ISLAND AND CONNECTICUT.



THE development of the cotton manufacture in Rhode Island and Connecticut has been upon a line perfectly distinct, and differing radically both from that of the industry in northern New England and that in Fall River. In each case the original impulse determined the direction, and no counter forces have caused a resultant motion different from the first. Nor has there been, to any large extent, at all events, a commingling of the systems. As we have seen, all the large manufacturing centres of Maine and New Hampshire, as well as of Lowell and Lawrence, were the creation of corporations organized, owned and controlled by Boston capitalists; and their subsequent growth was due to further investments by the same and other capitalists. Fall River, which is a community all by itself, started manufactures with home capital, on a corporation basis, and has grown almost entirely from within, without the assistance of outside capital. The first successful mill in Rhode Island, and indeed in the country, was that of Almy, Brown & Slater, who conducted the business as a partnership. Mr. Brown subsequently had other manufacturing interests apart from Mr. Slater, who, on his part, was concerned with his brother John in establishing a new spinning-mill in Smithfield, at the village called Slatersville. The Wilkinsons, who became interested in the early Slater enterprises, engaged in new undertakings on their own account. Young men brought up to the business in all these various mills branched out and went into manufacturing for themselves. They and their sons after them have continued and extended their ventures. In this way the valley of the Blackstone in southern Massachusetts and northern Rhode Island has been dotted over with factories; and so has the Quinebaug Valley in Eastern Connecticut; for it should be remarked that a large part of the cotton manufacture in Connecticut was established and is still controlled by the sons, grandsons, nephews and sons-in-law of the early Rhode Island manufacturers.

There have been two or three obvious and natural results of this form of growth. The individual establishments are, on the whole, of smaller size than those in either Fall River or northern New England. The owners in most cases began in a small way. Frequently they enlarged their original mills, but frequently also they

expanded their business by buying other factories, which might be twenty or fifty miles, or even farther, from the first mill. Secondly, the close individual application of the owners to their own property has brought about a much wider diversification of the industry than prevails elsewhere. While there is, of course, a large amount of standard goods produced, there are numerous mills which have been planned to produce goods of special classes. The average spinning of Rhode Island is finer than that of any other state, and it is also doubtless true that the yarn woven in the mills is of higher counts than elsewhere.

It must not be supposed that all or nearly all the cotton-manufacturing establishments of Rhode Island and Connecticut are owned by individuals or private firms. There are many corporations. But even these are in many cases the product of consolidations of private enterprises; and in other instances the corporation form is a mere convenience, the whole ownership being vested in two or three families, sometimes in one family. An excellent example of this may be seen in one large enterprise, which is a direct outgrowth of the Rhode Island system, although the enterprise itself is in Taunton, Mass. The Whittenton Manufacturing Company, already mentioned in the proper place, is a regularly organized corporation, but the whole property is owned by the three brothers Lovering. The manner in which successful and enterprising manufacturers extend their possessions is illustrated by the history of the great firms of Brown & Ives, and of B. B. & R. Knight. The once famous house of A. & W. Sprague was another example, but it met with disaster.

The peculiarities thus noted render it quite impossible to write the history of Rhode Island and Connecticut manufacturing in connected form. Indeed, it can be written neither chronologically, nor, without an infinite deal of repetition, biographically. The most that can be done in such a work as this is to select a few of the most important undertakings, and of the most noteworthy manufacturers, and give the leading facts in regard to them.

It is an interesting fact that the Slater family, which was so prominent in the origin of the cotton industry in this country, has continued to be engaged in the manufacture to the present time. The story of their connection with it is somewhat intricate, and must, nevertheless, be narrated in a few words. Samuel Slater, as one of the firm of Almy, Brown & Slater, built what is known as "the Old Slater Mill" at Pawtucket, in 1793. In 1798 he formed, with Oziel Wilkinson, his father-in-law, Timothy Green, and William Wilkinson, his brother-in-law, the firm of Samuel Slater & Company, and erected a mill, which began operations in 1801, on the east side of the river in what was then Rehoboth, Mass., but has since become a part of Pawtucket, R. I. In 1805, Almy, Brown, Samuel Slater, and John Slater, began the enterprise at Slatersville, in the town of Smithfield, R. I., which, like the rest, has already been mentioned in the first chapter. In 1811, in company with a young man named Bela Tiffany—the firm was known as Slater & Tiffany—he started another cotton factory in that part of Oxford, Mass., which is now the town of Webster. In 1823 Samuel and John Slater bought the mill at Jewett City, Conn., which had been operated unsuccessfully since 1813. The financial crisis of 1829 caused the failure of a number of concerns in Pawtucket, upon whose paper Samuel Slater was an endorser to a large amount, and he was compelled to ask his own creditors for an extension of time. He sold his one-third interest in the "Old Slater Mill" and his one-fourth in the Slatersville property to William Almy. The last named he afterward bought back, when his affairs were restored to a state of financial soundness, and still later he and John Slater became sole owners; but he never repurchased his interest in the mill which had given him his first reputation and had

laid the foundation of his fortune. He had also, as early as 1810, sold his share in the Rehoboth factory, known as the "White Mill;" so that his interest in Pawtucket manufacturing had ceased. Samuel Slater sold to his brother John his one-half share in the mills at Jewett City, Conn., in 1831. The mill at Oxford—now Webster—came into his sole possession soon after it was erected, and he formed the firm of Samuel Slater & Sons. In his later years this father of American cotton manufacturing resided at Webster—the new town incorporated by his efforts from territory of Dudley and Oxford—and here he died, April 21, 1835, in his sixty-seventh year. His sons inherited the Webster property, and also their father's interest in the Slatersville mills. These last they sold in 1849 to the sons of John Slater, who retained the extensive cotton and woollen mills of Webster, which are still in the possession of their sons,—the grandsons of John Slater.

John Slater, and after him his sons, John F. and William S., thus became the owners of the mills at Jewett City and at Slatersville. They also owned a mill at Hopeville, on the Pachaug river, three miles above Jewett City, which John Slater had bought on his own account in 1825. They continued to be joint owners after their father's death, May 27th, 1843, for almost thirty years. In 1872 the property was divided. John F. Slater took the mills at Jewett City and Hopeville, and William S. Slater those at Slatersville. Subsequent changes have been only those due to inheritance. The sons and descendants of John Slater have been among the most honored and respected men of their times.

The firm of Brown & Ives was for a very long time the most prominent concern in the manufacture of cotton in Rhode Island; and as it still continues, after the lapse of more than a century from the formation of the partnership, to hold a leading position in the industry, it is proper that it should receive the first mention after the Slaters. The house of Brown Brothers, merchants, of Providence, was established about the year 1735. It was succeeded in 1762 by the firm of Nicholas Brown & Co., composed of the sons of one of the original partners, two of whom withdrew with fortunes in 1782. Nicholas Brown, who retained the business, admitted George Benson to partnership, and, in 1790, his son, Nicholas, Jr. A year later the senior partner died, and in 1792 Thomas P. Ives was admitted. The firm of Brown, Benson & Ives continued until 1796, when Mr. Benson retired, and since that time the style of the firm, Brown & Ives, has remained unchanged. Then, and for many years afterward, the business of the house was purely mercantile. But in 1808 it became interested, with others, in the purchase of a mill privilege on the Blackstone river, at Blackstone, Mass. The investment was very small, only seven hundred dollars, but it was the beginning of a transfer of a very large part of the capital of the firm to manufacturing. In the year 1838 the last ship belonging to the firm was sold, and its career as a mercantile firm ceased. All the shares of the Blackstone Manufacturing Company became ultimately the property of Brown & Ives, who also built the Lonsdale Mill, for which they obtained a charter in 1834, and in 1846 bought the property of the Hope Company in Scituate. They thus became the owners of more than two hundred and twenty-five thousand spindles in Rhode Island, nearly one-ninth of all in the state, beside fifty thousand more in Massachusetts.

A firm which is much more recent in its organization than that of Brown & Ives, but one which has very far surpassed it in the extent of its operations, is that of B. B. & R. Knight. This firm was established in 1852, and still exists with its original partners. Moreover, it has now under its control and in its ownership more cotton-manufacturing machinery than was ever owned by any business house or corporation in the world. Robert Knight, the younger brother, was the first to

become interested in manufacturing. He was born in 1826. He began work at the age of eight years in the Cranston Print Works, and from the age of ten to seventeen was employed in a cotton mill in Coventry. Then followed a period of study at an academy, a short season as a teacher, and a time of employment as a clerk. In 1850 he purchased, with Zachariah Parker, a mill in Warwick, which they had been operating on lease for four years so successfully that they had, during that time, earned the purchase-money, \$40,000; in 1851 he bought out his partner; and in 1852 sold one-half to his elder brother, Benjamin B. Knight. The partnership then formed has remained unchanged. Benjamin Knight, born in 1813, like his brother was employed for a time in the Cranston Print Works; but then became a clerk, and began business on his own account soon after coming of age. He was a successful merchant at Providence when he first engaged in manufacturing. The brothers brought great skill and good judgment to their enterprise, and have steadily enlarged the field of their operations. Their first purchase was a mill at Hebronville, in Attleborough, Mass., and their next was one at Dodgeville, in the same town. Since then they have come into possession of the Grant Mill, at Providence; the Manchaug, in Sutton, Mass.; the Whiterock, at Westerly, R. I.; the Clinton, at Woonsocket; the Jackson and Fiskville, at Scituate; and the Readville, at Hyde Park, Mass.; and they own almost two hundred thousand spindles in the town of Warwick, in six large mills. These last-named mills were a part of the Sprague estate, and were purchased from the trustee of the estate in 1883. At present the Knights own in all more than four hundred thousand spindles, of which about three hundred thousand are in Rhode Island, and the rest in Massachusetts. Their products are almost exclusively medium and fine sheetings, shirtings and cambrics. Their most famous product is the "Fruit of the Loom."

Of the two million spindles operated in Rhode Island nearly thirteen hundred thousand are located in the small group of cities and towns in the northeast corner of the state, from Woonsocket to Providence, chiefly on the line of the Blackstone River, at Slatersville, Woonsocket, Manville, Albion, Lonsdale, Valley Falls, Central Falls, and Pawtucket. There is, however, another large group of mills, with an aggregate of about three hundred and thirty-five thousand spindles, at Warwick, most of which are owned, as has been stated, by B. B. & R. Knight. Warren has two factories, with a total of one hundred thousand spindles; there is a large group of small mills at Scituate, and others of less importance at Coventry and Westerly. The large group in the Blackstone Valley is the most important extension of the industry which began with the building of Slater's mill at Pawtucket in the last century. As has been noted, the first extension was when John Slater sought for and found a new water-power at what is now Slatersville, in the town of North Smithfield. The subsequent operations have filled in the many gaps between the two places, and have converted the whole Blackstone Valley into a continuous manufacturing village, with here and there concentration into large towns. The growth of Pawtucket itself would not have been very great but for the establishment there of the great mills of the Conant Thread Company, by the Scotch firm of J. and P. Coats. This is a comparatively modern enterprise, dating from 1868 only; but it is an immense establishment, having, it is reported, nearly or quite two hundred thousand spindles.

The name of Ballou is inseparably connected with the industries of Woonsocket. Oliver Ballou, a resident of Cumberland, had four sons, of whom three became very prominent in developing manufactures at Woonsocket. Dexter, the eldest, was born in 1789. When a young man he made and set up five cards and three spinning-

frames of eighty-four spindles each near his home in Cumberland. The business was conducted by his father and himself under the partnership style of Oliver Ballou & Son. In 1817 they removed to Woonsocket, and began business in a leased mill. The father retired from business in 1827, and sold his interest to his sons, Dexter and Hosea. The third brother, George, was already in the business of manufacturing warps for satinets at Woonsocket. It would be quite impossible, within reasonable limits, to recount the history of the growth of their business, and of the successive changes of partnership. The brothers leased or built several mills, some of which were afterwards sold for occupancy as woollen mills, and others were burned. In 1846 Hosea Ballou sold his mill at Woonsocket and removed to Putnam, Connecticut, where he erected another factory, which is now the property of the Putnam Manufacturing Company. Dexter Ballou, who had built a stone mill, called the Harrison, in 1836—now changed to a woollen mill—became the proprietor of the Social Mill in 1841. The Social had been organized in 1810, and had been operated with indifferent success. It occupied two small wooden buildings, equipped with a few thousand spindles. The proprietors, Arnold & Earle, failed in 1839, and Dexter Ballou, having operated the mill for the assignees for about two years, bought it, and thereafter managed both it and the Harrison Mill with great ability and success. After his death, in 1849, the business was carried on by his two sons, Oren A. and Hosea, until 1854. In that year Hosea Ballou, the younger, died, and Messrs. H. & R. Lippitt, of Providence, purchased a share in both mills. In 1855 the Social Manufacturing Company was incorporated, but the ownership was not changed. Mr. Oren A. Ballou continued to be the president of the company until he died.

The Lippitts came into partial ownership of the mills forty-five years after the enterprise was begun. The sons of the senior partner at present control it, forty years later still. They were already experienced cotton manufacturers when they first took part in the Woonsocket enterprise. In 1848 Henry and Robert Lippitt, with their father, Warren Lippitt, and other Providence capitalists, bought the so-called Tiffany Mill at Danielsonville, Connecticut, and organized the Quinebaug Company, and began the erection of a mill for ten thousand spindles. In 1854 a controlling interest in the company was sold to Amos D. and Moses B. Lockwood. The Lippitts were at the same time operating a cotton mill at Newport. Soon after the purchase of an interest in the Social and Harrison mills at Woonsocket, Robert Lippitt died. The surviving brother bought his share in the mills, and began to extend the business. The Social Mill was enlarged, and the Globe Mill, erected by George C. Ballou, was purchased and became a part of the plant of the Social Manufacturing Company. At present the corporation has one hundred and forty thousand spindles, making it one of the greatest cotton-manufacturing establishments in the country. The president is Governor Charles Warren Lippitt. The Harrison Mill was changed by its owners into a woollen mill in 1865, and is now known as the Lippitt Woollen Company. The Social Mill manufactures a variety of goods—shirtings, sheetings, silesias, warp and filling sateens, and cotton and silk linings.

The part borne by George C. Ballou, the youngest of the three sons of Oliver Ballou, in the development of Woonsocket industries was quite as great as that of either of his brothers. He began the business of spinning cotton on his own account at the age of twenty-eight, and three years later, in 1829, followed his father and his brothers to Woonsocket. There he remained in active business until his death in 1876, at the age of seventy-eight years. He was highly successful, and some of the important enterprises of Woonsocket were due to his energy. In 1845 he became the proprietor of the Clinton Mill, and greatly enlarged it. Since his death this mill

has passed into the control of B. B. & R. Knight. He bought the Globe Mill in 1864; but that has long since been consolidated with the Social. The present mill was built by the Ballou Manufacturing Company in 1873. Mr. Ballou was the chief stockholder in the company, and himself started the mill by feeding the first cotton on the apron of the lapper.

Still another family which is closely identified by many representatives with the cotton industry of the southern half of New England, is the Chace family. Oliver Chace, who built and was agent of the first mill at Fall River, the Troy, was the father of a large family, including three sons who grew to manhood. He himself lived at Fall River nearly forty years, actively engaged in manufacturing, and died there in 1852, at eighty-three years of age. But in 1839 he bought a tract of land at Valley Falls, in Cumberland, R. I., and leased it to his sons, Harvey and Samuel, who began manufacturing. After the death of their father, they became incorporated as the Valley Falls Manufacturing Company, and purchased additional mills—that just across the river from their first mill, the Albion Mill, at the village of Albion in the town of Lincoln, and the Moodus Mill, at East Haddam, Conn. Subsequently the property was divided. The Valley Falls Mill was taken by Samuel B. Chace, and the Albion and Moodus Mills by Harvey. The ownership has since descended to their sons, who still manage them.

One of the great names in Rhode Island manufacturing has disappeared completely from the list. William Sprague, as early as 1808, began spinning cotton in a mill at Cranston, which he had previously used as a grist-mill. This mill was burned in 1813. He immediately began the erection of a stone mill on the site, and resumed his trade, assisted by his daughter, Susanna, seventeen years old, and his sons, Amasa and William, who were younger. He was successful, and gradually enlarged his operations. In 1821 he bought two mills at Natick and erected two others. In 1824 he established a bleachery and print works at Cranston. He carried on his undertakings at both places with enterprise and ability, and his whole business career was one of wonderful prosperity. At his death, in 1836, the property was inherited by his three sons and two daughters, but soon came into the hands of two of the sons, Amasa and William, who continued and extended their father's success. The mills were greatly enlarged, and the print works became one of the most extensive in the country. They were both men of large ability. Amasa's strong points were his tact and business shrewdness and his skill in management. William was by far the more versatile of the two, was endowed with larger courage and also with more prudence. He had the capacity for detail, and the patience in working and waiting for results, which have characterized so many of the princes of trade and commerce—without which, indeed, the highest rank is never attained. In his day and in his own field he had no superior, and scarcely a rival. He was a politician as well as a manufacturer—was Governor of Rhode Island from 1838 to 1840, and United States Senator from 1842 to 1844, when he resigned. Amasa Sprague was murdered in 1843. William died in 1856, and the property then descended to his own son, Byron, and to his nephews, Amasa and William, sons of the first Amasa. Byron retired in 1862, and thereupon the remaining partners became incorporated by the Rhode Island Legislature under the style of the A. & W. Sprague Manufacturing Company, and also as the Quidnick Company. Already, three years before, in 1859, the firm of Hoyt, Sprague & Company had been organized, for the purpose of acting as selling agents for the Spragues in New York city. Mr. Hoyt, the head of the firm, was the husband of the daughter of the elder Governor William Sprague, and cousin of the younger Amasa and William.

The business was vastly extended under the new owners. About 1867 they purchased the extensive water-power on the Kennebec River at Augusta, including a mill of thirty-four thousand spindles, together with great tracts of land available for other factories. In the three states of Rhode Island, Connecticut and Maine they owned two hundred and eighty thousand spindles and twenty-eight printing machines, and employed more than ten thousand operatives. They also purchased timber lands and saw-mills in Maine; a great water privilege at Columbia, S. C., and land in Kansas and Texas. They controlled the street railway in Providence, and owned a vast amount of real estate in that city and in other parts of Rhode Island. The younger William Sprague was elected Governor of Rhode Island in 1860, and in 1863 entered the United States Senate, where he remained until the great downfall of the house in 1873.

The firm of Hoyt, Sprague & Co. was one of the first great houses carried down by the panic of September, 1873, following the failure of Jay Cooke & Co. The A. & W. Sprague Manufacturing Company struggled through the month, but suspended in October. Then began one of the most remarkable complications of litigation known to American courts. The full history of the case up to the autumn of 1882 is to be found in the *Providence Journal* of October 7 of that year, but even then the estate had not been wound up. On December 1, 1873, the Spragues executed to Zachariah Chafee a trust mortgage to secure sixteen thousand five hundred notes, amounting in all to \$14,000,000. The scheme was a three years' extension of all the debts of the two companies, and an attempt to rescue from distribution to the creditors the property of the Spragues, the value of which was estimated to be twenty million dollars. The execution of this trust mortgage was a violation of the national bankruptcy act, then in force, but it was supposed to be understood that no creditor would assail the act or petition the Spragues into bankruptcy. It was admitted generally that the expenses of bankruptcy proceedings would eat seriously into the assets of the concern. On the last day and almost at the last hour when, under the law, a petition in voluntary bankruptcy might be filed, such a petition was filed by a Providence bank, causing great excitement and consternation throughout the state. The petition was afterward withdrawn, on condition that a general assignment of all the property be made to Mr. Chafee. Subsequently both the creditors of the Spragues and the Spragues themselves became involved in controversies and suits at law against Mr. Chafee, and the assigneeship dragged along for about twelve years. Of course the final settlement brought but a small dividend to the creditors, and left no trace of the Spragues as manufacturers in Rhode Island. A large part of the mills in that state were sold to B. B. & R. Knight. The mills at Augusta, Maine, are now the property of the Edwards Manufacturing Company.

The cotton manufacture in Connecticut has been, as may be gathered from what has already been said, to a large extent an outgrowth of the manufacture in Rhode Island. The earliest factories were established either by Pawtucket spinners or by persons who learned the business in Rhode Island mills. The industry, indeed, has never obtained so strong a foothold in Connecticut as in Rhode Island, Massachusetts, New Hampshire and Maine. The mills are, for the most part, clustered on the streams that unite with the tidal waters of the Thames river at Norwich—in Norwich itself, and in the towns of Thompson, Putnam, Plainfield, Killingly and Windham. Within these townships are located more than seven-tenths of all the cotton spindles in the state.

The beginnings of the industry were not different from similar undertakings elsewhere in New England; but very few of the early enterprises were successful.

A mill was built at Jewett City in 1810, by a corporation known as the Jewett City Manufacturing Company. The history of this mill, which was sold in 1823 to Samuel and John Slater, has just been told. The most noteworthy mills in Connecticut, historically, are the Grosvenor-Dale, in Thompson; the Ponemah, in Norwich; and the Willimantic Linen Company, at Willimantic. We should not, however, omit mention of the very large mill at Baltic, which was a part of the famous Sprague estate, and which was destroyed in October, 1887, during the administration of that great property. A part of the mill was rebuilt by the Ponemah Company, into whose hands the property came in 1892.

The Ponemah Mill, at Norwich, is the most conspicuous, if not the only example, in Connecticut, of that corporation system in the conduct of a cotton mill which is well nigh universal in northern New England. In October, 1865, Mr. Edward P. Taft purchased a mill privilege and about six hundred acres of land on both sides of the Shetucket river, four miles above Norwich. In 1869 the Orray Taft Manufacturing Company was organized. The subscribers to the stock not only represented large interests of the Slater family—the sons of John Slater—but included Mr. J. Wiley Edmands, James L. Little, and other prominent manufacturers of Boston, concerned in the management of the Pacific Mills of Lawrence. It was intended to manufacture fine goods, and this policy was carried out with success. The Pacific percales were then gaining a great reputation, and the intimate connection of the two corporations secured for the Ponemah Mills—the name was changed in 1871—an excellent market for its goods, which were printed by the Pacific at Lawrence. Indeed the foreign importation of fine fabrics, except a few novelties, almost ceased. In process of time the Ponemah has extended widely the range of goods manufactured. Its management has remained substantially unchanged during all the years of its existence, and Mr. Taft is still the treasurer, after nearly forty years of service. With its one hundred and seventeen thousand five hundred spindles it is the largest cotton-manufacturing company in Connecticut, and its percales and fine lawns for printing bear a proud reputation.

Another excellent instance of the industrial development under individual management is afforded by the Grosvenor-Dale Company, at Thompson. The germ of the business was a small mill of sixteen hundred spindles erected at Masonville, in that town, by John Mason. The mill remained a possession of the Mason family until 1854, when it passed under the management of Dr. William Grosvenor. It had then a capacity of twenty-seven hundred spindles, which was increased, by 1865, to nineteen thousand. In 1864 Dr. Grosvenor bought another mill, situated a mile and a half north of Masonville, at a village known as Fisherville. In 1868 the two properties were consolidated, the name of the Grosvenor-Dale Company was assumed, and the two villages were renamed Grosvenor-Dale and North Grosvenor-Dale. In the same year another mill was built at the north village. The capacity of the several mills is now sixty-five thousand spindles. Dr. Grosvenor died in 1888, with a high reputation for integrity and enterprise. Although the Grosvenor-Dale Company is incorporated, its stock is all held by the children of Dr. Grosvenor.

The Willimantic Linen Company has played a conspicuous and honorable part in the establishment of an important branch of the cotton industry, the manufacture of sewing cotton. A century ago, linen fabrics were in almost universal use for underwear and household purposes; and the use of linen thread in sewing continued long after woven cotton had begun to displace woven linen. It is not known by whom or when cotton yarn was first used in the needle. Its use in that way is so obvious that the idea may have occurred to hundreds of people independently.

There is a tradition that the first suggestion was made by Mrs. Samuel Slater, and that yarn for sewing purposes was prepared and finished in the old Slater mill at Pawtucket. Be that as it may, it seems certain that the manufacture had another source of origin in Scotland, and that the product of that country was far superior to the American article during a long series of years. The sewing thread in ordinary use in the memory of many people still living was made of ordinary cotton, consisting of three strands, and put up in skeins. Nevertheless, in 1820, thread upon spools had been imported from Glasgow. At some time during the next twenty years a vast improvement was introduced in the manufacture. The six-cord thread was produced—two strands were twisted together in one direction, and then three of the double strands were twisted in the opposite direction. The result was a thread having a much greater stability of twist than that which had previously been in use.

Many American manufacturers tried in a languid fashion to produce a sewing thread to rival that of the Scotch makers, but they did not succeed. The popular desire for something cheap, the habit of using something else, and the lack of skill in manufacture were against them. The most ambitious effort in this direction prior to 1850 was that of the Sagamore Company, of Portsmouth, N. H., which undertook to manufacture a six-cord, well-finished thread. But the experiment was soon abandoned as a failure. A few years later, about 1855, there was imported into the country from England a three-cord thread known as *glace*—glazed or finished thread. Though it was greatly inferior to the six-cord thread, its polished surface, produced by mechanical means, made it an acceptable cheap substitute. Some of the manufacturers who had survived the discouragement caused by their failure to make a good six-cord thread, turned their attention to this new article. The first corporation that engaged in the enterprise was the Willington Thread Company, of Willington, Conn., which purchased a right to make glazed thread under the patent which protected it. The Willington Company was a very small concern, with less than a thousand spindles. The Willimantic Linen Company, at Willimantic, in the town of Windham, which up to that time had been engaged in the manufacture of coarse, unbleached linen fabrics and shoe thread, now turned attention to the enterprise of manufacturing cotton sewing thread. It purchased all the rights for the United States, save those held by the Willington Company, to make the glazed thread, and soon afterward it bought the plant of the Willington Company itself. The invention of “*glace*” cotton, by a singular chance, became the direct means of introducing successfully a much better class of goods, and laid the foundation of the manufacture of sewing cotton as it exists to-day. It stimulated inventors to produce the result by other processes than that which was protected by patents, and one of these rival processes, adopted by the firm of Greene & Daniels, of Pawtucket, gave that house an impetus which it has never lost. The Willimantic Company, in purchasing its little rival at Willington, became possessed of the services of Mr. Timothy Merrick, who afterward established at Holyoke, Mass., the enterprise which has grown into the Merrick Thread Company. The Willimantic mills were for some years under the supervision of Mr. Hezekiah Conant, whose name, as well as his most valuable services, were given to the great plant located at Pawtucket by Messrs. J. & P. Coats, of Paisley, Scotland, and known as the Conant Thread Company. Thus the Willimantic Linen Company became, in a certain sense, the parent of all the great thread-producing corporations of New England.

Meanwhile the Willimantic Company itself has had a splendid and a prosperous career. Its efforts to produce a first-rate six-cord thread were intelligently directed, and they were encouraged by two most opportune circumstances. The sewing-

machine was invented. No three-cord thread then made was suitable for use by this machine, which required a thread possessing strength, smoothness and stability of twist. Sea-island cotton, great care in manufacturing, and the adoption of the six-cord principle, enabled the Willimantic Company to meet and satisfy the demand. The other encouraging circumstance was the outbreak of the Civil War, which both increased greatly the demand for thread in the manufacture of clothing, and gave—by reason of the necessarily heavy duty on imported goods—the home market to the home producers. These influences brought great prosperity to the Willimantic, as well as to other thread-making corporations; and although several of the great manufacturers of Scotland have established extensive plants in New Jersey, Rhode Island and Massachusetts, the products of the Willimantic still rank with the best. A broad and liberal policy has always characterized this company. Its operatives are carefully selected and are of a higher class, in respect of intelligence, neatness and interest in their work, than those of almost any other cotton-manufacturing corporation in the country; and the mills themselves are models of what cotton factories should be.

CHAPTER XIX.

COTTON MANUFACTURE IN NEW ENGLAND—Continued.

A GENERAL VIEW.



HISTORY of the cotton manufacture in New England is substantially a history of the manufacture for the whole country. At every enumeration of the spindles employed in this industry New England has reported at least seven-tenths, and sometimes more than four-fifths, of the aggregate.

Even these fractions tell something less than the whole truth; for until within a few years the production of the South was largely a household industry, and the few small and badly equipped mills supplied little more than the local demand. Recently this condition of things has changed materially, and hereafter the industry in the South must always be taken into the account. But for the whole period covered by this review every event, foreign or domestic, which affected the prosperity of cotton manufacturers, exhausted almost its whole influence upon the spinners of New England.

We have seen already that domestic spinning of flax and wool led naturally, when the supply of raw cotton became abundant enough, to domestic spinning of that fibre. The next step was spinning by clumsy machinery set in motion by water-power; the yarn produced was sold for weaving on hand looms which were installed in American homes from one end of the land to the other. Then came, simultaneously, an increased demand for cloth, owing to a state of war, a cutting-off of the foreign supply of yarn, a full supply of raw material, and the introduction of the power loom. From this combination resulted both a change in the habit of the people with respect to their clothing, and the establishment of the cotton-factory system to meet the new and increased wants of the people. It is here that the history of the cotton manufacture, as it exists to-day, begins. We can see, at the very beginning of this epoch, the working of the several agencies that have since affected and do

to-day affect the prosperity of cotton manufacturers. There is no department of human industry that calls more imperatively than does this, for the employment of the latest and most economical devices to increase the efficiency of machinery and diminish the amount of human labor. As soon as the power loom became a practical machine it was necessary for all manufacturers to adopt it. Not all those who did so were successful, but those who did not went to the wall. To this period, too, belongs the experience, first, of a "protection" to home industry afforded by a general prohibition of foreign trade; next, of a market flooded with foreign goods, when the country was again open to commerce with the world; and, finally, of a tariff policy expressly designed to guard manufacturers against ruinous foreign competition.

Sufficient reference has been made to the conditions that prevailed up to the close of the War of 1812, in the introductory chapter. They had been so favorable that factories multiplied and were on the whole profitable. No statistics are preserved of the importation of cotton goods before the year 1821; but it is the unanimous testimony of writers that the importation became very large, in spite of a duty of thirty-five per cent. which was levied during and after the war with Great Britain. When the tariff of 1816 was under consideration the manufacturers made their first appeal to Congress for adequate protection. Largely through the influence of Mr. Francis C. Lowell, the principle of the "minimum" was introduced into the tariff, where it remained until 1846. When the foreign value of a yard of cotton cloth—with ten or twenty per cent. added, according as it came from Europe or Asia—was less than twenty-five cents a yard, its value was taken at twenty-five cents, and duty was assessed accordingly. A similar provision was made in respect of yarn. Unbleached and uncolored yarn worth less than sixty cents was assessed at eighty cents; if bleached or colored the minimum was seventy-five cents. This principle being established, the manufacturers were content with twenty-five per cent. as a duty sufficiently protective. They did not complain greatly at a clause in the act fixing the rate of duty at twenty per cent. after the 30th of June, 1819.

For several years after the passage of this act the cotton manufacture was prosperous. A succinct review of the situation is presented in a memorial to Congress by Samuel Slater and other Rhode Island manufacturers, printed by order of the Senate in January, 1824.* The law of 1816, the memorialists declared, was "productive of much benefit to the domestic manufacturer, and of incalculable advantage to the community. . . . The benefit enjoyed by the manufacturer consisted principally in the comparative steadiness which it gave to the market price of the manufactured article. High profits were out of the question, in a case where the number, the activity and enterprise of competitors rendered all plans of monopoly impracticable." So far as the public was concerned, "in a very short time after the law was passed, the rapid increase and extension of the cotton manufacture caused such a competition among our own manufacturers in the article of coarse brown and white cottons, the only fabric protected by that act, that the country became, and still continues to be, fully supplied with the article at a much less price than similar articles were formerly imported at, without taking into consideration the superior quality of the domestic cloth." From the same source we learn that the mills which had been stopped by the difficulties of 1815 and 1816 gradually resumed operation, some by the original owners, others by purchasers at sheriff's sales. At the same time the great accumulation of foreign goods imported before the law was passed, was absorbed by the market. By the year 1820 the domestic article had occupied the home market to the

* Twentieth Cong., 1st Session. Senate Doc. No. 13.

almost complete exclusion of foreign fabrics. But after a year or two of full prosperity a new complication or series of complications, arose. The tariff act of 1816 levied a duty of twenty-five per cent. upon all manufactures of cotton and wool, except blankets, woollen rugs and worsted or stuff goods. These last were subject to a duty of fifteen per cent. only. There was no "minimum" valuation with respect either to linen or to manufactures of wool. Shrewd advantage was taken of this fact for the benefit of the British manufacturer. The habit of the people had not been so fully confirmed in the wearing of cotton that they were not easily tempted to revert to the use of worsted and linen, when fabrics of those materials were cheap. In 1822 and 1823, so great was the competition among manufacturers, and so large the importation of cheap stuff goods, admitted to entry at a duty of only fifteen per cent. *ad valorem*, and of cheap linens admitted at the same rate, both free from any minimum valuation, that the coarse cloth manufacture became once more embarrassed.* The case was made worse because the British system of drawbacks on manufactured goods exported operated as a bounty of more than the whole American duty. The manufacturers asked that the principle of the minimum valuation be extended to all textiles, whether of cotton, wool or linen, and that a duty of twenty-five per cent. be laid upon all such goods. They asked further that to this duty be added a sum equal to all the drawbacks, bounties or other payments received by the goods in the country of their origin. This last request was not heeded. But a minimum was established for fabrics into which wool entered as a component part; the minimum for cotton cloth was raised to thirty cents a square yard; and the *ad valorem* duty on all manufactures of the several fibres was fixed at twenty-five per cent. This gave "adequate protection" to the manufacturers, and never since that time have they had occasion to complain that the tariff did not secure the home market to them, for all coarse and medium goods, which form a very large proportion of the goods consumed. The thirty cent minimum remained in force until 1846; the twenty-five per cent. *ad valorem* continued to be levied until the passage of Clay's "compromise" tariff of 1833, under the operation of which it was reduced by five successive steps, at intervals of two years, to twenty-one and a half per cent. The tariff of 1842 raised the rate to thirty per cent. The Walker tariff of 1846 cut it down to twenty-five per cent., without any provision of a minimum valuation. But by that time the American manufacturers had established themselves in a position where the reduction caused them little injury.

During the period covered by this brief review of tariff legislation other important events had occurred, affecting the industry. The Arkwright spinning devices were generally adopted after the Slater Mill at Pawtucket had proved their value. Throstle spinning was the only machine spinning, for the reason that no other practical method had been invented. But the invention of the hand mule was followed by the application of power to a part of the process, and ultimately, in 1824, Richard Roberts succeeded in producing a self-acting mule propelled by power, which combined the principles of the spinning jenny and the Arkwright rollers in a practical machine. Great improvements—some of the most important of them the invention of William Mason, of Taunton, and others which have been introduced through the Mason Machine Works, which were founded by him—have since been made in the mule, but Roberts's machine, patented in England in 1825, is the basis of the mule of to-day. This invention revolutionized the cotton manufacture once more. The old throstles would spin more yarn than the mule, but the product was imperfect. Fine

* Slater's Memorial, above quoted.

spinning was not possible with that machine, since the drag was necessarily more than fine yarn could stand without breaking. But the mule could be made to spin yarn almost as fine as could be spun by hand. Consequently it was necessary to equip with mules all mills in which it was proposed to make fine goods, or fabrics of the better class. In England the revolution went much further than it did in this country. Continuous spinning became almost wholly obsolete, and the mule superseded every other machine. In this country the mule was adopted very largely, but the advantage of continuous spinning was so great that inventors turned their attention to the improvement of the throstle. First, the flyer, which had been regarded as a necessary part of the spinning frames then in universal use, was dispensed with in a spindle invented by a Mr. Danforth, of Paterson, N. J., in 1829. At about the same time or a little earlier, the ring spinning frame was invented. There is some doubt as to the origin of the invention. General W. F. Draper, in his "History of Spindles," says that it is not definitely known to whom the invention should be ascribed. In the "History of the Cotton Centenary" at Pawtucket it is asserted that the device was that of John Thorp, of Providence. In principle it was what it is to-day—a thin piece of flat wire bent like a C, that "traveled" on the upper surface of a highly-polished metallic ring. It encircled the spindle, and by mechanism was moved up and down the whole length of the bobbin. The drag of the "traveler" wound the yarn upon the bobbin. The device was very crude at first, but was greatly improved by William Mason, of Taunton, and formed the basis of the exceedingly efficient spindles which are in use to-day. It is not proposed to follow, step by step, the improvement of the spinning frame spindle, although the later improvements must be referred to again. Suffice it to say that the result of invention was to enable the spinning frame, after a time, to hold its own against the mule, and in the most recent years to gain upon it.

An account has already been given, in connection with the history of the Waltham enterprise, of the invention of a power loom, the first in use in this country. Manufacturers in other parts of New England were slow in adopting the improvement. Indeed they never did adopt the Waltham loom. In 1815 William Gilmour arrived in Boston from Scotland, his native country. He was a machinist and had been acquainted with the power loom and dressing machine in Scotland. It was not long before he visited Slatersville and proposed to Mr. John Slater to build machinery for power loom weaving, staking his compensation upon his success in producing effective machinery. John Slater was warmly in favor of the enterprise, but was overruled by his brother Samuel, and Gilmour was forced to content himself with employment at other occupations in the Slatersville mill. But after a few months he went to North Providence, where Judge Daniel Lyman had a small factory on the Woonasquatucket River, and proposed to him to build a loom. Judge Lyman employed him for the purpose, and after several trials and discouragements a successful loom was produced in the spring of 1817. The most important difference between Gilmour's loom and that at Waltham was in the use by Gilmour of a crank motion instead of the cam motion for the lift and fall of the harness. But the Gilmour loom was so much simpler in construction that it cost but seventy dollars, while that of the Waltham loom was nearly or quite three hundred dollars.* The success of the first loom led to the immediate manufacture of eleven more which were put in operation in Judge Lyman's mill. This event was one of far-reaching importance. Judge Lyman did not try to keep the benefit of Gilmour's ingenuity to himself, but

* Bagnall, vol. i., p. 549.

for a merely nominal sum gave patterns to David Wilkinson, and permitted all manufacturers, without any restrictions, to introduce the new loom. As has already been stated, the Waltham loom was protected by patents, and its expense was so great that few manufacturers had made use of it. But the Gilmour loom was immediately introduced into a large number of mills in Rhode Island and southern Massachusetts, which thus became weaving as well as spinning mills, and, in all probability, had more to do with establishing the American system of complete manufacture under one roof than even the Waltham experiment. Moreover, it was only ten years after the introduction of the Gilmour loom that an adaptation of it was introduced at Waltham itself. In an improved form the Gilmour loom is that now in most common use in this country.

The period of thirty years now under consideration—from the passage of the tariff act of 1816 to the Walker tariff of 1846—was one of general prosperity for the cotton manufacture. It was interrupted, as we have seen, in 1822 and 1823, when foreign manufacturers took advantage of a loophole in the tariff act, and again in 1837 by the terrible financial reverses which affected business of all kinds and everywhere. But the crisis of 1837 seems to have been disastrous rather to individual manufacturers and corporations than to the manufacture itself. Many establishments became bankrupt, and mills were sold or companies were reorganized, but the production of goods continued. Indeed, from a table quoted in De Bow's *Review* (p. 272) for March, 1850, giving the apparent home consumption of cotton for each year from 1826 to 1849, it appears that there were but six years of the twenty-three when the amount did not show an increase, and the increase was steady and large in every year from 1836 to 1840. Moreover, this thirty-year period saw the creation of Lowell and Nashua, the beginning of Manchester, and very large extensions of the manufacture in Rhode Island. It also witnessed the growth of a very respectable export trade in domestic cottons, which was already more than a million dollars in value in 1828, and had increased to more than four million dollars in 1845. The extent to which the country had established its industrial independence, so far as cotton manufactures are concerned, is indicated by the following passage from the New York Tariff Address of 1832—an address in favor of a high tariff—which is quoted by Henry Lee in No. 6 of his free-trade tracts, published in the same year: "In the article of cotton it is admitted that our manufacture has arrived at such perfection in the production of the coarse fabrics, that they are not only furnished at little more than one-half the cost which the imported articles of the same kind bore a few years ago, but they are produced as cheaply at the present time as our foreign rivals, under all the excitement of the American competition, are able to furnish them. They have had a constant and increasing demand for several years for exportation as well as for home consumption. None but the finest qualities are imported, which are little, if at all, affected by the minimum duty." * This satisfactory condition of things continued, with slight interruption, for many years. A writer in the New York *Dry Goods Reporter*, which was an organ of the manufacturing interest, gave in 1850 a review of the situation during the years immediately preceding, and drew from an abundance of statistics the conclusion that, in spite of the great increase in the number of spindles at work, the demand for consumption gradually overtook the supply from the mills. He asserts that at the close of 1843 the demand exceeded the supply, and so continued to the end of 1846, when another large addition to the spinning capacity of the country and heavy importations caused by the tariff of

* Exposition of Evidence, etc. By Henry Lee, No. 6, p. 11.

1846 reversed the conditions. Nevertheless the growth of the country in population and wealth quickly brought back an equipoise between consumption and domestic supply, giving the manufacturers at the beginning of 1850 every reason to hope for a continuance of prosperity.

The assertion has been made already that the Walker tariff caused cotton manufacturers no serious injury. As they had found that they could compete with English spinners and weavers in all the markets of the world with the coarse fabrics that formed the staple of their production, they might have submitted to a greater reduction than was made by the tariff of 1846 without losing their trade. The importation of cotton goods shows no material increase after that legislation. In fact there was no year from 1846 to 1860 where the exports of cotton cloth were not of more than double the value of similar goods imported from abroad. There was an increase in the amount of printed and dyed goods, but it was not important enough, even at its largest, to exercise any influence upon the prosperity of American manufacturers. Although no adverse effect of the Walker tariff can be traced in the tables of foreign commerce, there is no doubt that during the period under consideration the conditions were actually far less favorable than they had been before. But it is not difficult to assign these conditions to their true cause. In 1849 a somewhat acrimonious controversy was conducted in the pages of "Hunt's Merchants' Magazine," between Amos A. Lawrence and General C. T. James, over the question whether cotton manufacturing might be profitably established in the southern states, and incidentally as to the comparative merits of steam-power and water-power. General James was the apostle of steam; and it was owing to his exertions that the important Naumkeag Mill at Salem, the James and the Bartlett Mills at Newburyport, and the Portsmouth Steam Mill, were built near tide-water at New England harbors in order to obtain sea-borne fuel at a cheap rate. In the course of the wordy warfare, which at this distance of time seems unnecessarily and therefore amusingly bitter, some facts are brought out in regard to the condition of cotton-manufacturing enterprises in 1849. Mr. Lawrence gave a table of the dividends paid by twenty-six of the leading corporations of Massachusetts and New Hampshire for each year from 1839 to 1849 inclusive. The returns show a marked falling off in the years after 1846. Thus, seven Lowell corporations paid during 1839 an average dividend of eight and a half per cent. They increased their profits wonderfully up to 1846, when they divided an average of nineteen and a half per cent. Then there was an abrupt and continuous drop to an average of seven per cent. in 1849. Of the twenty-six companies reported, twenty-one showed dividends exceeding ten per cent. in 1846; only five of them paid as much as ten per cent. in 1847; but one in 1849. As for the condition of things in 1850 we have the testimony of one who is vouched for by the editor of the *Boston Daily Advertiser*—in which paper the article appears—as a gentleman whose means of information were of the best. This writer declared that for the preceding twenty months the cotton factories of New England had been operated at a loss. He admitted that there had been some small dividends, but that the profits which they represented were due to a rise of the price of cotton while in the hands of manufacturers, and not to the turning of that cotton into yarn and cloth.

The explanation of this serious change for the worse in the condition of the industry seems to be the great increase in domestic production. The enormous profits realized during the years from 1842 to 1846, which averaged higher than in any other period of four years in the history of cotton manufacturing, bore their legitimate fruit. Old corporations increased their plants, and new companies sprang into being. It was just at this time that the Wamsutta Mill, at New Bedford, the steam

mills just mentioned, and other large establishments were putting their first goods on the market. The utilization of the water-power at Lawrence began just at the culmination of the season of prosperity, and its competition helped to make the depression more severe. But after 1850 we find few complaints of hard times. Consumption gradually overtook supply; and although the golden age of the early forties did not return, manufacturers had fairly satisfactory dividends upon their capital. The export trade flourished. The profits of mill-owners were not seriously diminished by the necessity of equipping their mills with newly-invented machinery. Upon the whole, therefore, the period from 1846 to 1860, taken together, may be set down as one of prosperity and growth.

The war period which succeeded was a season of dearth. Every one of the conditions, in fact, under which the manufacture had been conducted was almost completely reversed. Manufacturers had been accustomed to an abundant and rapidly increasing supply of their raw material. That supply was now almost completely cut off. They had occupied the home market completely, and had invaded all parts of the world with their wares. Now one-half of the territory of the country was closed against them by a state of war, American commerce was blotted from the ocean, and the foreign markets so laboriously built up were lost, never to be recovered. Under such circumstances the mills of New England could be operated but a small part of the time. Indeed, a large proportion of the male operatives were in the armies of the United States. For years the price of goods had been declining, but now the scarcity and high price of cotton, as well as of labor, caused a prodigious advance, which was made even more striking by the derangement of the currency and the consequent statement of prices in terms of depreciated paper money. Two or three series of quotations will exhibit the extreme change of conditions. Middling upland cotton, which sold throughout the year 1860 at an average slightly below eleven cents a pound, was quoted at one dollar and fifty-four cents a pound in July, 1864. Amoskeag denims, the price of which was fifteen cents a yard in 1860, were quoted at eighty-eight cents in October, 1864. Atlantic A sheetings rose from eight and a quarter cents in 1860 to sixty-six and a half cents in 1864; Amoskeag A. C. A. tickings from seventeen cents to one dollar and five cents. There were large profits for some of the mills even then, but the great dividends declared by a few of them were made out of the rise in the value of the cotton they had on hand.

But the war period, long as it seemed to those who passed through it, was but a brief episode in the history of the manufacture, and the abnormal conditions passed away. The years which followed were profitable years for the mills. The stocks of cotton goods were completely exhausted and had to be replenished; the clothing of the people was worn out and needed to be replaced. The Civil War had brought about, for purposes of both revenue and protection, a higher tariff than ever, and the foreigner was completely excluded from the market for any goods which American manufacturers had prepared their mills to produce. This, too, was the era of "Inflation of the currency," and trade was so active that the prices of all commodities were high. If they declined slightly, they declined less than did the premium on gold; so that practically they advanced. This season of general apparent prosperity and of high profits to the cotton mills induced renewed activity in building factories and in enlarging the capacity of those already in existence. This activity culminated in the unprecedented development of Fall River in 1871 and 1872. How much of the long depression which followed the financial crisis of 1873 was due to general causes, and how much to the excessive over-investment of money in cotton factories just before that event, it would be idle to inquire. But it may be regarded as certain

that the sharp and cruel sufferings of manufacturers and of their employés between 1873 and 1879 were intensified by the construction of mills for which there was no need, and by the undue competition thereby created.

This competition, moreover, led to one consequence which has been of immense benefit to the community at large, whatever may have been its effect upon the manufacturers' profits. Marvellous improvements were made in spindles, first in ring-spinning and later in mules; and, perhaps, greater improvements still in carding machines. Inasmuch as the quantity of yarn is directly proportioned to the speed of the spindle, and since the successive inventions of Rabbeth, Sawyer and others added fifty per cent. to the number of turns a spindle might make in a minute, it became the interest of manufacturers to adopt every novelty that would thus increase the production of a given number of spindles, a given amount of power, a given number of hands. Thus, and thus only, could a mill hope to make money while its neighbors and rivals were operating without profit. The activity of inventors has continued down to the present time. It is not exaggerating greatly to say that the improvements made in all the important machines used in turning cotton into cloth are so frequent and of such value that any cotton mill becomes antiquated in five years unless its old machinery is replaced by new.

Still another consequence of the "hard times" after 1873 is to be noted, and this also has continued until now to have its effect upon the manufacture. It was at this period that the labor agitation became most active, and the difficulties between employers and their hands most acute. The labor problem, in many forms, indeed, has been ever present to the New England cotton manufacturer. In such a historical review as this the subject cannot be treated in detail; but neither can it be omitted from consideration.

In the early days of the industry, and indeed up to a time not long anterior to the Civil War, the problem took the form, Where is efficient help to be obtained? An admirable solution was devised by the wise men who established the Waltham enterprise, and who founded Lowell. They encountered at the outset a prejudice against factory work for women. On the other side of the Atlantic those only accepted such employment who belonged to a degraded class, and the moral reputation of factory women was of the lowest. But in this country there was no such class to be drawn upon. It was therefore necessary to take such steps as would elevate the occupation and make it possible for self-respecting women to adopt it. This was not only undertaken, but it was accomplished. By excluding from the factories every man and woman of even doubtful morals, and by continuing that policy until the confidence of the community was completely won, the manufacturing corporations opened for themselves a great labor market. They kept it open by observing their own rules most strictly, and by treating their help with great consideration. In the language of Mrs. H. H. Robinson, who began life as a "doffer girl" in a Lowell mill about 1835, in her interesting sketch of "Early Factory Life in New England," "Help was too valuable to be ill-treated." * This principle was carried so far that "the most favored of the girls were sometimes invited to the houses of the dignitaries of the mills, and thus the line of social division was not rigidly maintained." † It was not, of course, practicable to exercise so strict an oversight over the characters of the men, but the duty was by no means overlooked. The same authority informs us ‡ that "The agents and overseers were usually married men with families of growing sons and daughters. They were members,

* Mass. Labor Report, 1883, p. 382.

† *Ib.*, p. 383.

‡ *Ib.*, p. 383.

and sometimes deacons, of the church, and teachers in the same Sunday-school with the girls employed under them. They were generally men of moral and temperate habits, and exercised a good influence over the help." These passages throw a flood of light upon the fact that the factory workers, during the first half of this century, were drawn from the homes and farms of sturdy Yankees, and that the corporations had no difficulty in filling their mills with such help, so long as the demand was not beyond the capacity of those farms and homes to supply it. Moreover, what Lowell did, the other factory towns of northern New England—Manchester and Nashua, Saco, Biddeford and Lewiston, and the smaller towns where there was but a single factory, like Salem, Portsmouth, Brunswick and Augusta—were able to do. The factory help in them all was of the same class.

A different condition of things prevailed in the mills of southern New England. The factory population of Lowell was transient; that of Pawtucket, Fall River and other nuclei of the industry was more permanent. The families of operatives moved into the towns where a new mill was built and remained there so long as employment was to be had. They were natives or foreigners, as the case might be—at first Americans, but displaced quite early in the history of the industry by Irish. Several members, in many cases all the members, of the family had employment in the same mill. In the great group of manufacturing cities which make Bristol county in Massachusetts, and Providence county in Rhode Island, immeasurably the greatest seat of this manufacture in the country, the "family system," as it may be called, has always prevailed. None of the corporations built boarding-houses; most of them built tenement houses to be rented to their employés. They were never under the necessity of going to extremes in their consideration for their hands, as the Lowell mill-owners were; for, after the earliest years, there was always a competition from beneath, working people of one nationality after another being displaced by those of another national origin who would work for lower wages, and exist—we can hardly say be contented—with fewer of the comforts and refinements of life.

The margin of profit for a cotton mill has sometimes been large, sometimes small, sometimes nothing at all. An unfavorable turn in the cotton market just after a large purchase of raw material has been made, a failure to equip the mill with the latest economical devices, or a slight mistake in management may destroy the profit altogether. When some untoward circumstance threatens the mill with loss, the most obvious method to effect a rescue of the profit is by reducing wages. This is the most prolific cause of disputes between employers and employed. When the industry was young it was not easy to resort to this measure, particularly not in such a community as Lowell. The young women had come there with the definite object of earning and saving money to set themselves up in life. If their wages were to be cut down, there was no object in continuing to work in the mill. Nor was there any need of a trade union, nor of a concerted strike. Whoever was dissatisfied with her earnings could and would go home, and leave her place open to any one who would take it. Consequently we find, in the early history of this manufacture, almost no wage disputes. There was a brief strike of several hundred Lowell operatives in 1836 against a reduction of twelve and a half per cent. in their wages, but they were unsuccessful. This is almost the only case of a strike in a Massachusetts cotton mill prior to 1850. Mrs. Robinson, in her sketch of "Early Factory Life," already referred to,* describes the marching of the girls out of the mills, their assembling in a grove on Chapel Hill, where one of the strikers, standing on a pump, urged her companions to stand firm for their rights..

* Mass. Labor Report, 1883, p. 391.

Labor difficulties of a serious sort invaded Fall River long before they occurred at any of the mills belonging to the northern New England system. The reason is not remote nor hard to find. Fall River has always recruited its labor from foreign sources. At each great increase in the number of spindles, by the building of new mills, troops of foreigners have been imported, or have come in by spontaneous immigration. Each great conflict between employers and employed has seen another influx of alien labor. The great "boom" of 1870-72 resulted in an increase of nearly seventy-five per cent. in the population of Fall River between 1870 and 1875, and in the last named year the foreign born population of the city outnumbered the natives by more than two thousand. How different was the nationality of these aliens from that of the foreign population of New England generally may be seen from the fact that they were, in round numbers, nine thousand Irish, nine thousand English, and five thousand Canadians. In 1890 there were fifteen thousand Canadians, eleven thousand English and nine thousand Irish. Substantially the whole increase in the foreign-born population—which is much the same thing as the mill population—was of French Canadians. At one time there was a large importation of people of this nationality, carried on through a regular agency, to supply the places of other foreign operatives who were on strike. The English working people brought with them an inherited distrust of and dislike for employers. It is perhaps doing no injustice to the employers of Fall River to say that they have exerted themselves less than they might have done to dispel the prejudice which their employes imported as a part of their own personality. Some noble exceptions must be made to this statement. But certainly there has never been a general and persistent effort on the part of Fall River manufacturers, made in the way such efforts must be made to be successful, to win truly friendly feelings from their employes. It may be said, in extenuation, that there is no keener competition in the business world than that which the unification of product imposes on these manufacturers. They are striving for a fraction of a cent, and can omit no economy that will give it to them. The closest buying of material, the highest speed of machinery, the greatest prudence in management, are all necessary; and added to this, they seem to have found it essential to take from their mill hands all they could obtain and to give them as little as they might. Moreover, candor compels the admission that they have had to deal, usually, with a class of labor which was little amenable to gentle influences. The working people, particularly those of English origin, have been suspicious, if not sullen. The situation was that of an armed truce. The spinners and weavers would give exactly the service required of them, but no more; and very little good-will went with that service. A slight grievance at any time was sufficient to make the relations of the two parties those of active hostility, and if there seemed to be a chance of success there would be a strike. Of late years the relations are, nevertheless, improved, with the incoming of the French, who are far less distrustful and turbulent than the English whom they have, to a certain extent, supplanted.

Meanwhile a change has taken place in the other cotton manufacturing centres of New England. The old native help was first displaced by Irish, who came in gradually, and who adopted many of the ways and customs of the Yankees, as they were under the most important and beneficial of the old regulations. Later, a considerable English element from the Lancashire spinning mills came in, and caused a certain amount of trouble. But the strikes in the northern regions were neither so frequent nor so violent as those at Fall River. In still more recent years the French Canadians have displaced other labor to a very large extent, insomuch that they are now to be found by the tens of thousands in the mills of Maine, New Hampshire and



Dr. Wm. Houghton

northern Massachusetts. With some obvious faults they have many excellences ; not the least of which is a reasonable and tractable disposition. Consequently violent labor disputes have been few. The Canadians are clannish and form communities by themselves. Their advent has led to certain interesting social changes, but not to serious labor difficulties.

The grand result is that labor conditions in all the cotton centres of New England have now approximated those of the spinning districts of Lancashire. There is a permanent factory population forming a class strictly by itself. It is more or less organized. On occasion it acts unitedly for offence or defence. The several members of the family, husband, wife, and the older children, are all employed in the mills. They sometimes, but not frequently, rise out of the conditions to which they are born. The noble scheme which had its best development at Lowell and Lawrence could be successful so long as the demand for labor did not exceed the possible supply from country homes. It was abandoned when it became necessary to import alien labor to supply the deficiency.

Since the restoration of business activity coincident in point of time with the general resumption of specie payments, in 1879, no important general event has occurred that deserves detailed mention. But so far as the New England manufacturers are concerned they have been forced to watch anxiously the development of a new competition in the southern states. While the increase of spinning capacity in the North has continued, there has been a greater proportional increase in the states near the source of the cotton supply. Large and successful mills have been built, and their product has competed in the great markets of the country with that of New England. So great has seemed the promise of this old field, now become a new one, that not a few northern corporations of long standing in the industry have raised fresh capital and instead of erecting new mills at Lowell and other points in Massachusetts, have built them in the South. Thus New England is now beginning to compete against itself. The extent, the success, and the consequence of this movement are matters for the future historian to consider.



ALBERT C. HOUGHTON.

ALBERT C. HOUGHTON was born at Stamford, Vt., April 13, 1844, and was the youngest son in a family of nine children born to James and Chloe Houghton. James Houghton was one of the prominent men of Stamford, keeping a general store, and being trial justice, and was a prominent and successful politician, both in occupying elective offices and in shaping political affairs in southern Vermont.

Being left at home, as the youngest son, and the health and affairs of his father making this needful, Albert, relinquishing the study of the law and the educational and professional life which were most attractive to him, began a business career in Stamford, when he was eighteen years old, by starting a general store, which he developed into the leading establishment of that kind in that section. Subsequently, in partnership with his brother, the late J. R. Houghton, he founded the Houghton Chemical Works at Stamford, manufacturing red and iron liquors and acetic acid, in the sale of which products Albert came into the acquaintance and friendship of many of the prominent manufacturers of New England before he was twenty-one years of age.

Seeking a larger field than his native town afforded, Mr. Houghton began business in North Adams in 1868, engaging in real estate and the grain business, operating the Parker Mill on Brooklyn street, and developing the Young farm into the suburb of Houghtonville. In 1869, forming a copartnership with others, he bought the Beaver Mill property and continued its business. In 1870, Mr. Houghton organized the North Pownal Manufacturing Company, buying the Plunkett & Barber cotton mill and property at North Pownal, Vt., and enlarging extensively its facilities and business. In this year Mr. Houghton, with his parents and family, removed from Stamford to North Adams, where his residence has since been. In 1873 he became connected with the Arnold Print Works, becoming its treasurer in 1876, and its president in 1881, continuing in that position and in the active direction of the affairs of this corporation until the present time. He is president and owner of the A. J. Houghton Brewing Company of Boston, and has managed the affairs of that organization since the death of its founder, the late A. J. Houghton, in 1892. In 1877 Mr. Houghton bought the mill and property of the Williamstown Manufacturing Company, and has since that time directed its operations. In 1878 the Arnold Print Works bought the Eclipse Mill and property, and, in 1896, both the Eclipse Mill and the Beaver Mill were enlarged to three times their original capacity, and equipped for the finest cotton manufacturing in the country.

In 1893 Mr. Houghton was elected a director of the West End Railway of Boston, and has been since unanimously continued in that office. In 1895 he was chosen director of the Boston & Albany Railroad, which office he still holds. In 1896 he was chosen a director of the International Trust Company of Boston. Mr. Houghton is also a trustee of Williams College, and a member of its financial committee; is president of the North Adams Savings Bank, and vice-president of the Adams National Bank of North Adams, and a director of the Berkshire Life Insurance Company of Pittsfield.

In 1866 Mr. Houghton was married to Miss Cordelia J. Smith, of Stamford, Vt. Of their four living children the two younger are now studying in Germany, where also the two elder finished their education.

In 1895 the town of North Adams was incorporated as a city. Mr. Houghton received the nomination of all parties and was elected the first Mayor, and also re-nominated and re-elected to succeed himself as Mayor for the year 1897.

MATTHEW C. D. BORDEN.

IN Fall River, Mass., the name of Borden is familiar as a household word. Throughout the present century it has been synonymous with everything that made for the upbuilding of the material interests of this interesting and enterprising community.

Holder Borden, Col. Richard Borden and Jefferson Borden were pioneers in the establishment of most of the manufacturing industries which have been such prominent objects in the history of this part of New England. Matthew C. D. Borden is, and has been for many years, a resident of the City of New York. He was born in Fall River, Mass., July 18, 1842; prepared for college at Phillips Academy, Andover, Mass., and entered Yale in the fall of 1860, graduating with the class of 1864. Very soon after, he went to New York, and was employed in the dry-goods



W. L. Borden

commission house of Lathrop, Ludington & Company. Later he became a member of the firm of Low, Harriman & Company, and subsequently of Wright, Bliss & Fabyan, and their successors, Bliss, Fabyan & Company, with which firm he is still connected as a partner.

Mr. Borden's career as a merchant has been distinguished in a degree, but it is overshadowed by his achievements as an organizer and manager of the most extensive and successful calico-printing and print-cloth manufacturing establishments in the United States. After leaving college he began his career as a merchant at the very bottom, and in the old-fashioned way. By hard work, close study of detail, as well as of the principles of business, which obtained in the days of his apprenticeship, so to speak, he became "rooted and grounded" in the practices and precepts which must be mastered by every thoroughly-equipped merchant. The conditions which surrounded him kept constantly before his mind the possibilities of improvement and development in the management of the property of the American Print Works at Fall River, whose product he handled as a merchant.

In order to form a consecutive and lucid narrative of the connection of Mr. Borden with the industrial interests of Fall River it is necessary to rehearse something of the history of Fall River itself, and to indicate some of the important features of the identification with those interests of his great predecessors.

Prior to the year 1821, Col. Richard Borden, the father of the subject of this sketch, and the owner of a flourishing grist-mill, and Bradford Durfee, a shipwright, were associated in the business of building and equipping sailing vessels, which were used in course of their trade with Providence and with other points which were convenient and accessible. The iron and wood used were worked into proper form on the spot. Out of the activities and experiences thus acquired came the organization of the Fall River Iron Works Company, in the year 1821. With these two remarkable men were associated Holder Borden, David Anthony, William Valentine, Joseph Butler and Abram and Isaac Wilkinson, of Providence. The capital originally subscribed was \$24,000. Soon after the inauguration of the enterprise, the two Wilkinsons drew out \$6,000 of the amount, which was their investment, thus leaving \$18,000 as the working capital of what subsequently became one of the most strikingly successful manufacturing enterprises of the time.

In 1825 this association was incorporated under the laws of Massachusetts, with a capital of \$200,000. In 1845 this was increased to \$960,000; but the last amount, with something over half a million of dollars used in connection with the business of the company, and with other constantly remunerative enterprises in which it was interested, was accumulated from earnings, not one dollar having been added by subscriptions to the \$18,000 originally contributed. Col. Richard Borden was the Agent and Treasurer of the Fall River Iron Works Company from the beginning, and to his indomitable will, business sagacity, capacity for organization, and command of resources, were due in large part the phenomenal success achieved, although no man was more generous than he in recognition of services rendered by others in the building up and maintenance of the numerous enterprises with which he was identified.

Colonel Borden was born in what was then Free Town, now Fall River, April 12, 1795. His connection with the Fall River Iron Works Company continued for fifty years. The company manufactured hoop iron, iron rods and wrought iron nails. So triumphant was its success that its officers devoted much time and attention to the improvement of its extensive landed property, water-power, etc., and its stockholders and managers became interested in numerous undertakings other than the original

one. In this manner the Iron Works Company became one of the owners of the Wautuppa Reservoir Company, organized in 1826; in the Troy Cotton and Woollen Manufacturing Company; in the Fall River Manufactory; in the Annawan Mill, built by it in 1825; in the American Print Works, whose buildings were erected by the Iron Works Company in 1834 and leased to the Print Works Company; in the Metacomet Mill, built in 1846; in the Fall River Railroad, opened in 1846; in the Bay State Steamboat Line, established in 1847; in the Fall River Gas Works, built in 1847, as well as in the erection of many buildings which were leased to individuals for various manufacturing and other purposes.

Colonel Borden's shipbuilding experience equipped him for subsequent connection with steamboat interests. Under the inspiration of the Iron Works Company a regular line of steamboats was established to Providence in 1827. The first steamboat was named the "Hancock." In 1832 the "King Philip" was built; in 1845 the "Bradford Durfee;" in 1874 the "Richard Borden." In 1846 Colonel Borden projected and oversaw the construction of the railroad from Fall River to Myricks, to connect with the New Bedford and Taunton Railroad. Directly afterward he constructed a line of railroad to Braintree to connect with the Old Colony Railroad. He also organized and built the Cape Cod Railroad, from Middleborough to Cape Cod. This was done with a view to obtaining a Boston outlet for the products and people of Fall River. Subsequently this considerable railroad interest was merged into and absorbed by the Old Colony Railroad Company.

In 1847 Colonel Borden and his brother Jefferson organized the Bay State Steamboat Company with \$300,000 capital, built the steamboat "Bay State," and also chartered the steamboat "Massachusetts." The next year they built the "Empire State," and, in 1854, the "Metropolis." The boats of this line ran to New York, and proved to be extremely profitable. In due course of time the line was absorbed, under the direction of Colonel Borden, by the Old Colony Railroad Company.

This leads up to the connection between the Fall River Iron Works Company and the American Printing Company. In 1834 Holder Borden, impressed with the necessity for increasing the facilities for the printing of calicoes in Fall River, where print cloths were already manufactured on a large scale, together with several associates, such as Col. Richard Borden, Jefferson Borden and the Durfees, organized the American Print Works Company, the buildings of which, as has been before stated, being constructed by the Fall River Iron Works Company. After a comparatively brief connection with the enterprise, Holder Borden was compelled to retire on account of ill health, and his place as agent and treasurer was taken by Jefferson Borden, who had been for some sixteen years the agent of the Fall River Iron Works Company, at Providence, R. I. The success attained by the print works was quite phenomenal. Col. Richard Borden was the president of the works, and lent his energy and business perspicuity and his great fertility of resources to the upbuilding of the enterprise.

In December, 1867, the buildings of the print works were practically destroyed by fire, entailing a loss of something like \$2,000,000. The Bay State Works, then a part of the American Print Works Company, had burned earlier in the same month. With characteristic energy the ravages of the fire were speedily obliterated, and the massive and architecturally attractive buildings of the present works were brought into existence to serve as a monument to the enterprise, courage and inexhaustible resources of those two performers of modern miracles, Richard and Jefferson Borden.

When these works started in January, 1835, they had a capacity of four machines

for printing calicoes, with an average production of two thousand to twenty-five hundred pieces of prints per week. One-half or two-thirds of this quantity had a part of the colors blocked in. The management of Jefferson Borden continued until 1876, a period of thirty-nine years, when Thomas J. Borden was elected to fill the position. In 1877 a local authority states: "This company stands pre-eminent among the calico printing establishments of the country for persistent energy of management, adaptation of means to ends, perseverance in misfortune and loss. Starting out mainly as an experiment adjunct to the manufacture of print cloths, it has won a place among the permanent institutions."

In 1840 the works were enlarged, a new machine building, a dye-house, etc., were added, and the production of prints was nearly doubled.

In 1857 a charter was obtained, and Col. Richard Borden was elected President, and so continued until his death in 1874. In 1858 the Bay State Print Works, then under the management of Thomas J. Borden, were purchased by the American Print Works, and both establishments were continued under the management of Jefferson Borden. But the panic of 1873 seriously affected the condition of the American Print Works, and it became necessary to contribute a considerable amount of new capital. This was done, and the Print Works continued under the management of Thomas J. Borden as treasurer, with his brother, M. C. D. Borden, as the responsible agent for handling the product in New York city. But the misfortunes of the company had not yet culminated, although they did so in 1879, when it was compelled to ask indulgence at the hands of its creditors. Then it was that M. C. D. Borden became intimately and responsibly connected with the guidance of the fortunes of the Print Works.

For some years the two brothers conducted the business of the Print Works jointly, but in 1886 Thomas J. disposed of his interest in the business to M. C. D. Borden, who then became, and has since continued to be, the sole owner of the property. As manager and director of the Print Works, and as agent for the disposition of its product, the opportunity for which Mr. Borden had long been waiting was presented, and the success achieved has been unparalleled.

The main buildings of the American Printing Company, for so the re-organized corporation is designated, is 407 feet by 60 feet; the north L is 141 by 56 feet; the south L is 176 by 41 feet. The floor space is 668,923 square feet. There are 21 boilers of 2,340 horse-power, and the coal consumed is 300 tons per week. There is one horizontal condensing engine of 600 horse-power and one beam engine of 300 horse-power. There is a bleaching capacity for 275 tons of cloth per week. There are 19 printing machines, 400 indigo vats and a production of 75,000 pieces per week; 750 hands are employed.

About the time that M. C. D. Borden obtained exclusive control of the stock of the Printing Company, he became impressed with the necessity which existed of becoming, at least to a considerable extent, independent of the exactions of the print-cloth manufacturers. This could best be accomplished by engaging in the manufacture of print cloths on his own account. Means for accomplishing this end were at his command. The unused property of the Fall River Iron Works Company, adjoining that on which the Print Works stood, would admirably serve the purpose; besides, it was desirable that Mr. Borden should control the water privileges which the charter of the Fall River Iron Works Company embraced. Careful preparations were made to carry out the project which had been gradually taking form in his active mind. He proceeded quietly to secure a controlling interest in the stock of the Iron Works Company, and also to purchase additional and contiguous land for

his purposes. The site thus obtained would be as advantageous in reference to the water-front facilities, and the cheapened conditions of production insured, as it was originally to the Fall River Iron Works Company. Cotton, coal and material of every kind required in the manufacture of print cloths could be landed at the deep water docks of his own property.

In 1889 print-cloth mill No. 1 was built. It was three hundred and eighty-six feet long, one hundred and twenty feet wide, and four stories high. Great was the amazement of the citizens and business men of Fall River when the construction of this mill was begun. All sorts of predictions were indulged as regards the outcome of the experiment, but in no wise was Mr. Borden deterred by unfavorable criticism or influenced by favorable comment. This was but the preliminary step toward what was to follow. The success of the experiment was absolute and unqualified.

In 1892 mill No. 2 was built. That was five hundred and seventy-five feet long, one hundred and twenty feet wide, and three stories high.

In 1893 mill No. 3 was built. That was three hundred and nine feet long, one hundred and forty feet wide, and four stories high, and in 1894 mill No. 4 was built. That was three hundred and seventy-two and one-half feet long, one hundred and sixty-five and one-half feet wide, and four stories high.

The mills taken together constitute eight hundred and forty thousand square feet of floor surface. They are equipped with four triple-expansion engines of nine thousand horse-power, and with forty-five horizontal tubular boilers. The chimney of the plant is three hundred and fifty feet high, and thirty feet in diameter at the base. There are two hundred and sixty-five thousand spindles, seven thousand seven hundred looms, and three hundred and seventy-seven cards. The amount of cloth which may be turned out is fifty-three thousand pieces per week. The cotton used is one thousand bales per week; the coal consumed four hundred tons per week. The number of employees is two thousand seven hundred.

However much experienced and conservative manufacturers and mill managers may have, at the outset, doubted the wisdom and the practicability of Mr. Borden's venture, they were speedily compelled to admit that his thorough comprehension of all the elements of the complicated situation was unsurpassed by that of any other manufacturer or merchant in New England, for Mr. Borden was both manufacturer and merchant. The difficulties which he found it necessary to overcome were numerous and perplexing, and none but a man of resolute purpose, absolutely clear conviction and comprehensive grasp, could have succeeded. It is only human that most men should be affected at trying moments in their lives by adverse criticism, and oftentimes they are prevented from the accomplishment of a perfectly legitimate and feasible enterprise. Not so with Mr. Borden. He was clear in his own mind as to the feasibility of what he sought to accomplish. Once convinced, he pursued his purpose absolutely without deviation to the triumphant end.

When his works were completed, it was possible for him, as owner of the print works which consumed the product of the print-cloth mills, to produce calicoes at a less cost than any other printer in the United States or the world. He was independent of the print cloth market, and men everywhere in mercantile walks who had contact with Mr. Borden, were convinced that a great problem had been successfully solved, and that Mr. Borden had demonstrated himself to be one of the most original, forceful and sagacious business men of the century. What he has accomplished is due to the ability and the character which he has developed. The two great plants which he controls cover twenty-nine acres of ground. The buildings are kept in perfect condition, the machinery is of the latest and most improved



Jos Wickes

pattern, the methods are progressive and enlightened, and the results speak for themselves.

Aside from his success as a manufacturer and merchant, Mr. Borden is recognized as one of the foremost citizens of the metropolis. The fortune which he has accumulated is judiciously and liberally employed. He is an influential and potent director in numerous financial and benevolent enterprises. He is lavish in hospitality, abundantly generous in promoting charitable and public enterprises, earnest and effective in the performance of all of the duties of citizenship, and thoroughly respected both in the place of his birth and wherever else he is known.

JOSEPH NICKERSON.

WILLIAM NICKERSON, of Norwich, England, came to New England in 1637, and landed at Boston on the 20th of June in that year. He was born in 1604, and married Ann, daughter of Nicholas Busby, who came with her husband, accompanied by four children, Nicholas, Robert, Elizabeth and Ann. After his arrival, a son, Joseph, was born in December, 1647, and a daughter, Elizabeth, in October, 1649, and at various dates three other children, Samuel, John and William.

He settled first in Watertown, and afterwards in Yarmouth, Mass., where he bought, in 1643, of John Quason, alias Towsomet, Sachem of Monomoyick, a tract of land near Potanumaquut, and what is now called Great Harbor. From William Nickerson, Joseph Nickerson, the subject of this sketch, was descended. He was the grandson of Joseph Nickerson, the fourth in descent from the ancestor William who moved from Yarmouth to Brewster and became a prominent man in that town. David Nickerson, son of Joseph, was probably born in Brewster and died at sea February 27, 1819. He married Priscilla Snow, and had five sons, David, Joseph, Jonathan Snow, Frederick and Thomas. All of these sons, except Thomas, became ship-masters. Frederick and Thomas became successful merchants and ship-owners, and largely interested in the construction and management of railroads in the West. Frederick was a Director in the Union Pacific Railroad, and Thomas President of the Atchison, Topeka and Santa Fé and the Mexican Central Railroads.

Joseph Nickerson, son of David and Priscilla (Snow) Nickerson, was born in Brewster, Mass., March 3, 1804. In his early youth he attended the common schools of his native town, and at the age of twelve, following the custom of Cape Cod boys, went to sea as cabin-boy. In obedience to the almost unvarying law of heredity he took to the ways of a sea life as naturally as the young bird flies, or the young duck swims. He must have possessed, however, something more than an inclination for a life on the sea, and a readiness to learn the rules and methods of a seaman's life, for at the age of nineteen he was in command of a ship. In his day the qualifications for master included more than sailorly qualities and an ability to command men. A ship sailed from her home port for Calcutta, China, Valparaiso or the northwest coast, with instructions, to be sure, from her owners, but bound on a fourteen months' voyage, during which no word of advice could be received by her captain to meet new conditions and exigencies, which his instructions did not fully foresee, and consequently he necessarily became to a large degree the manager of large enterprises in the success of which the fortunes of his employers were involved. Whether to accept or refuse an offered freight his judgment must decide, or whether to anticipate a rising market in the purchase of a cargo. He must possess the qualities which make

a good merchant as well as a skillful sailor, and according to the value of his returns to his owners his character and reputation were measured and determined.

At the age of twenty-three, when most men are entering on their career, he retired from the sea with a competency, and settled in Boston. Before the settlement of Chicago he went on a prospecting tour through the West with his friend Osborn Howes, also a retired ship-master; and, with the eye of prophecy, fixed upon the shores of Lake Michigan, at a spot not far from where that city now stands, as a site for a great Western metropolis. Though reaping no benefit from his foresight in this particular case, his tour taught him to appreciate the resources of the West, to realize the certainty of its growth, and the necessity at no distant period of the extension to the West of that railroad system which was then rapidly developing in the East.

After his settlement in Boston he became largely interested in shipping, and, until the decline of our navigation, devoted himself chiefly to his investments in that direction. He at a later day associated himself with the manufacture of cotton, and at the time of his death was president of the Arlington Mills, in which he was a large owner. In addition to this, with a memory still alive of his early Western tour, and having faith in the profitable development of Western railroads, he embarked with zeal and confidence in schemes for their construction. He had a large interest in the Atchison, Topeka and Santa Fé Railroad, and was the director of that company to whom the managers turned for aid and advice in overcoming obstacles and relieving themselves from unexpected burdens and embarrassments. He was also a director in the Chicago, Iowa and Nebraska Railroad, the Cedar Rapids and Missouri River, the Fremont, Elk Horn and Missouri Valley, the Iowa Falls and Sioux City, and of several railroads which were extensions and branches of the Atchison, Topeka and Santa Fé. He was president also of the Pueblo and Arkansas Valley Railroad.

Mr. Nickerson, though immersed in business and often harassed by its cares, was not deaf to the calls of charity, or forgetful of the welfare of the people of his native town. The town of Brewster is enjoying the privileges of a public library, for which during his life he erected a commodious building; and various charitable institutions in Boston have been materially benefited by his bequests.

He married, first, at Brewster, June 22, 1827, Emeline, daughter of Nathaniel and Lydia (Mayo) Winslow; and second, July 19, 1837, Louisa, daughter of Abraham and Rhoda (Clark) Winslow. He died in Brewster, February 28, 1880, leaving two sons, Albert Winslow Nickerson, who succeeded his father as president of the Arlington Mills and director of the Atchison, Topeka and Santa Fé Railroad, who died in 1893; and George Augustus Nickerson, who graduated at Harvard in 1876, and succeeded his brother in the above offices.

TIMOTHY MERRICK.

THE subject of this sketch was descended from Thomas Merrick, who was born in Wales in 1620, and, coming to New England in 1630, settled in 1638 in Agawam, now Springfield, Mass. Thomas Merrick married, July 14, 1639, Sarah, daughter of Rowland Stebbins, and had Thomas, 1641; Sarah, 1643; Mary, 1645; Mary again, 1645; Hannah, 1649. He married a second time August 21, 1653, Elizabeth Tilley, and had Elizabeth, 1654; Miriam, 1656; John, 1658; Elizabeth again, 1661; Thomas again, 1664; Tilley, 1667; James, 1669. John Merrick,



Timothy Herring

one of the above children by the second marriage, married February 11, 1686-7, Mary Day, and had John, 1688; Thomas, 1690; John, 1692; Mary, 1694; Samuel, 1695; Elizabeth, 1696; Abigail, 1696; Jonathan, 1700; Abigail again, 1702; Thomas again, 1704; Margaret, 1705; Benjamin, 1707; Deborah, 1710. He married for a second wife, January 14, 1725, widow Rebekah Stebbins. John Merrick, the oldest of the above children, married January 23, 1717, Sarah Parsons, of Springfield, and had Sarah, June, 1718; John, August, 1720; Eunice, October, 1721; Stephen, June, 1722; Mary, December, 1726; Ruth, May, 1729; Joseph, October, 1733; Abigail, June, 1727. Joseph Merrick, one of the above children, married in January, 1755, Ann Holt, and had Ann, September, 1756; Timothy, August, 1760; Thomas, June, 1763; Joseph, February, 1765; Caleb, 1767; Hannah, July, 1769; Constant, January, 1772; Elizabeth, July, 1774. Timothy Merrick, one of the above children, married in November, 1787, Mehitabel Atwood, and had Joseph, July 2, 1789, and Anna, February, 1791. Joseph Merrick, one of these children, and the father of the subject of this sketch, had his residence in Willington, Conn., and married April 10, 1814, Lodicea Dunton. His children were: Samuel Dunton, born April 29, 1815, and now a retired clergyman, residing in Addison, N. Y.; Lovina Marcy, April 5, 1817; Ann, July 12, 1819; Elizabeth Alden, September 24, 1821; Timothy, December 2, 1823; John, April 19, 1826; Austin, May 23, 1828.

As above stated, Timothy Merrick, the subject of this sketch, was born in Willington, Conn., December 2, 1823. After attending the public schools, at the age of eleven years he went to Coventry, Conn., where he worked in a cotton mill, splicing yarn on a cotton mule at ninety-two cents a week, and afterwards worked a short time at shoemaking. When about twenty-six years of age he associated himself with Gardner Hall, and began the manufacture of thread in a small way in Willington, his native town. Meeting with success in his business, he removed to Willimantic, and in 1860 opened a mill at Mansfield Hollow, and engaged more extensively in manufacturing the same article. In 1865 the Merrick Thread Company was formed in Holyoke, Mass., and Mr. Merrick was made treasurer. To the management of the affairs of that company he thereafterward devoted all his abilities. The beginnings of the company were small, and for a time its manufacture was confined to its mill on South Main street, in Holyoke. At a later day two large mills were built on Appleton street, and still later another mill was built on Main street, opposite the old mill, and connected with it by a covered bridge across the street. When in full operation the employment of thirteen hundred and fifty hands is needed, and the yearly product of the company is not far from seven million dozen spools of thread. In the management of the affairs of the company he was assisted by his son, Origen Hall Merrick.

Mr. Merrick was married four times, first to Justina Hall, of Willington, Conn., who was the mother of Origen Hall Merrick, above mentioned; second to Sarah Congdon, of Pomfret, Conn., who was the mother of Mrs. Justina Hollister, of Grand Rapids, Mich.; Mrs. Susan Heywood, of Aiken, S. C.; Mary Merrick; Charles Merrick, a graduate of Harvard in 1894; Benjamin, a student at the Boston Latin School, and George, a graduate of Boston Institute of Technology in 1890, who died in April, 1892; third, to Professor Priscilla Braislin, of Vassar College, and fourth to Harriet Allen, who is still living.

Mr. Merrick did not permit himself to wander far away from the paths of business. The political field presented to him no allurements, and only as a delegate to the Republican National Convention in 1880 was he ever drawn within its limits. It could not be expected, however, that he would withhold his aid from the manage-

ment of enterprises in which, as a citizen and business man, in whose judgment and skill the community confided, he could be of manifest use. He was the president of the City National Bank of Holyoke, of the Mechanics' Savings Bank, and the Farr Alpaca Company of that city, president of the Hudson River Water-Power and Paper Company, of Mechanicville, N. Y., and either president or director of various other companies in Holyoke. He was for three years president of the Home Market Club of Boston, and was a firm believer in a high tariff, the maintenance of which that organization was formed to promote. He served also as a selectman of Holyoke before its incorporation as a city, and afterwards as a member of the City Council. As a member of the Second Baptist Church of Holyoke he was active and liberal in the support of a Christian ministry, and was a large contributor to the building fund of the Holyoke Young Men's Christian Association. He was prominent in the Baptist denomination, and a trustee of Newton Theological Seminary and of "Shaw University," in North Carolina, an institution for the education of the colored people. His benefactions were not, however, confined to his party or his church. Wherever the burden of poverty or sorrow rested, his hand was ever ready with its alleviating touch.

The death of his son in 1892 inflicted a blow from which Mr. Merrick never fully recovered. After a summer in Europe in search of rest, and after several months of illness, in January, 1894, with health partially restored, he, with his wife and daughter, joined an excursion party to California. On the 9th of March, after a visit to the Midwinter Fair, he returned to his hotel in San Francisco, and was at once attacked by a uræmic convulsion, the effect of kidney trouble, and after lingering in a state of unconsciousness died on Monday, the 19th of that month. The news of his death was sorrowfully received, not only by the business community, of which he had long been a prominent member, but by many a poor and suffering man who had known his warm heart and felt his charitable hand. His body was brought home, and reposes in the family vault in "Forestdale," the beautiful burial-place of the city he loved so well.

JOHN M. SEELEY.

JOHN M. SEELEY, son of John Seeley, was born in Great Barrington, Mass., April 17, 1814. His boyhood was passed in his native town, attending the common schools in the village of Great Barrington, then taught by the late Squire Seeley. His education was continued at Lenox Academy, and later on at Stockbridge School, which was presided over at that time by Rev. Mark Hopkins, D. D., who subsequently became the distinguished president of Williams College. Upon leaving school, he obtained employment in a cotton mill in Van Deusenville, then under the superintendency of Washington Adams. After remaining here some time, he joined Judge Lyman E. Munson in 1847 in business in Van Deusenville, which continued about five years, when he removed to South Adams and became interested in the Maple Grove Mills. He remained in that place until 1856, when he removed to Housatonic and was appointed treasurer, agent and general manager of the Monument Mills Company, which had been formed in 1850. Under the able management of Mr. Seeley, this company prospered, and fourteen years later, in company with Henry Adams and Joseph G. Fuller, he erected a mill in Housatonic and began the manufacture of cotton warp. In conjunction with George Church and George Coffing, in 1860 he organized the Waubeek Mills Corporation, and in 1866 the present building was erected for the manufacture of cotton warp.



John M. Tuley

He was an active factor in the development of the manufacturing interests of Housatonic, and the development of the Monument Mills Company from a small beginning to one of the representative establishments in Berkshire County was largely due to Mr. Seeley's superior business ability. In all matters pertaining to the advancement of the welfare of Housatonic he always took an active part. He occupied the position of postmaster about thirty years, and was identified with all good works. His superior executive ability early attracted the attention of his fellow-citizens in whatever locality he resided. He was a man of marked prominence in his town. Possessing an affable disposition, a taste and an ability for the discharge of public duties, and an integrity of character that was never touched by whisper or reflection, it is not strange that he was selected early in life by his fellow-citizens as one well fitted to assume and administer public trusts in a variety of town and county relations. While residing at South Adams, he represented that town in the Legislature in 1854. In 1863-64 and '65 he was selectman in Great Barrington, and, during this trying period in our country's history, rendered the town and county valuable services in the raising of troops, and was tireless in his efforts to fill the various quotas called for. Mr. C. J. Taylor and George Church were also selectmen of this town in 1864 and 1865, and this trio was known as the "war board."

Politically he was a Whig and a Republican from the organization of that party, and an earnest advocate of its principles. He was a member of the Legislature in 1874, and in 1882 and 1883 represented his district in the State Senate, and in all the varied positions which he occupied, both public and private, Mr. Seeley discharged his duties with credit to himself and to the satisfaction of all concerned. He was deeply interested in the business and social life of the community. He contributed largely to the support of the Congregational Church, and was liberal-minded, broad in his views, and had the confidence and esteem of the people in a remarkable degree. In private life he was genial and interesting; always cheerful, naturally fond of home, he was the life of the social circle. Tender and affectionate, he had a large heart and an open hand, and the record of his life was that these had never been unjustly closed upon his unfortunate fellow-men. He was prominent in all good work, and in the front rank of patriotic devotion to the maintenance of law and order and of correct living. He had a wide acquaintance in the business world, and enjoyed an enviable reputation, an unspotted record for commercial integrity and honor, and his counsel was often sought in trying emergencies, both locally and on the broader arenas of commercial, political and patriotic action.

September 20, 1837, Mr. Seeley was united in marriage with Sarah, daughter of John R. Montgomery, and their family consisted of one daughter, Mrs. Laura E. Filburn, now residing at Housatonic.

If we were to select any traits of character for which Mr. Seeley was especially remarkable, it would be for his activity, honesty and fidelity to what he believed to be right. He was not hasty in his judgment, but a conclusion reached by what seemed to him sufficient data was rarely abandoned. In strength of mind and will for the execution of his purposes he was not excelled by any man who has lived in his town, and he was not only pure in his morals, a model of integrity, but if faith in God and love for man be a test of character, he was a Christian as well as a gentleman. He had reached a peace that nothing disturbed and hope that nothing dimmed. He was a model husband, a loving father, a firm friend and an honored citizen.

ARTHUR H. LOWE.

THE first American ancestor of Mr. Lowe came to New England in the earliest years of the Massachusetts colony and settled in Ipswich. David Lowe, one of his descendants, was born, lived and died in Fitchburg, Mass. John Lowe, son of David, was born in Fitchburg, and married Sarah Mead, of Boxborough, Mass. Arthur H. Lowe, the subject of this sketch, is the son of John and Sarah (Mead) Lowe, and was born in Rindge, N. H., August 20, 1853. His parents removed to Fitchburg, Mass., when he was about two years of age. He is the sixth child of a family of twelve sons and five daughters, all of whom are living, the youngest having been born in 1883. He was educated in the public schools of that town. In his early manhood he was engaged with his father and several of his brothers in the wholesale provision business in Fitchburg, and in that business, under the guidance of his father, he received his business training. In 1879, at the age of twenty-six, he formed a partnership with his father-in-law, John Parkhill, and Thomas R. B. Dole, and, buying the Davis chair factory building, began the manufacture of gingham under the firm-name of the Parkhill Manufacturing Company. Beginning with thirty looms, the business of the firm so rapidly increased that additional accommodations were soon required. New buildings were erected, the old ones were enlarged, the factory equipments were improved, and a prosperous career was firmly established. On the 31st of December, 1879, the firm was incorporated as the Parkhill Manufacturing Company, with a capital of one hundred thousand dollars, which was increased in 1889 to three hundred thousand. Mr. Lowe, who had been from the first agent and manager, was chosen treasurer and agent of the new Company, and to his enterprise and financial skill its success is largely due. In 1885 he organized and erected the Cleghorn Mills, and became its treasurer. In 1886 the Parkhill Manufacturing Company bought the Fitchburg Woollen Mills, and with new buildings, and repairs and alterations of the old, thoroughly equipped them for the manufacture of gingham. In 1889 they bought the Cleghorn Mills, which have been very much enlarged and improved. The plant of the company, therefore, consists of Mill A, the original factory on the site of the Davis chair factory; Mill B, which is the enlarged and renovated plant of the Fitchburg Woollen Mills, and Mill C, formerly the Cleghorn Mills, which were erected in 1885 for the manufacture of fine dress goods of cotton, wool and silk. These mills are all situated on the banks of the Nashua River, are three and four stories high, built of brick, and contain about eight acres of floor space. They are run by about one hundred and twenty-five horse-power of water, and by five steam engines, producing about one thousand horse-power. They contain two thousand two hundred looms, are lighted by their own electric plant, and employ about eleven hundred hands, with an annual pay-roll of four hundred thousand dollars. The annual product of the mills amounts to about twenty million yards, valued at a million and a half dollars, and is sold through the commission house of Denny, Poor & Co., in New York. It finds its way into every part of the United States, in successful competition with foreign goods, and to a limited extent into Mexico, Cuba and the states of South America. The officers of the company are: John Parkhill, President; Arthur H. Lowe, Treasurer, and Rodney Wallace and David M. Dillon, of Fitchburg, James E. Dean, of New York, and Joseph N. White, of Winchendon, together with the President and Treasurer, Directors.



William H. Fount

The good judgment and enterprise exhibited by Mr. Lowe as a director and the treasurer of the company have been recognized and appreciated by his fellow-citizens and often sought in their behalf. He is a director in the Fitchburg National Bank and the Fitchburg and Leominster Street Railway, a trustee in the Fitchburg Savings Bank, vice-president of the Fidelity Co-operative Bank of Fitchburg, director of the Champion Card and Paper Company of Pepperell, director of the New England Cotton Manufacturers' Association, director of the Home Market Club, director of the Paper Mill Fire Insurance Company of Boston, director of the Park Club of Fitchburg, chairman of the Fitchburg Board of Park Commissioners, state trustee of the Baldwinsville Hospital for Children, and stockholder and member in several other companies and societies, and in 1896 was elected president of the New England Cotton Manufacturers' Association. To his influence the transfer to Fitchburg of the railroad car shops was chiefly due, and the establishment of other important enterprises in that city has been brought about by his public spirit and persevering effort. In 1891 and 1892 he was president of the Fitchburg Board of Trade, and to the performance of his duties in that office he devoted much time and labor, and proved himself there as elsewhere a public benefactor. In 1893 he was Mayor of the city, having served in 1888 as a member of the Board of Aldermen. He was chosen Mayor by the combined vote of the Republican and Temperance parties, but after a year's service declined a renomination. During his administration five miles of sewers were built, and two and one-half miles of sidewalk, one new school-house and two fire stations, and land was bought and plans were matured for a new high school-house and land bought for a police station, and the site for the Burbank Hospital was also bought. A railroad crossing within the limits of the city was abolished and a new set of city ordinances were adopted.

After his retirement it was said of him by a critical observer of his acts, that "in all his transactions he confirmed his reputation for straightforwardness and fearlessness in the discharge of his duties, and he closed his term with no shadow of suspicion of having used the place to further his private ends."

Mr. Lowe married, December 11, 1878, Annie, daughter of John and Margaret (Cleghorn) Parkhill, and has three children,—Russell Bryant, Annie Margaret and Rachel Parkhill, all of whom are at school.



CHAPTER XX.

THE NEW ENGLAND WOOL MANUFACTURE.

BY S. N. D. NORTH.

THE HOUSEHOLD INDUSTRY OF COLONIAL TIMES.



SOME YEARS ago they dedicated a new public library in the beautiful city of Rehoboth, on the line between the commonwealths of Massachusetts and Rhode Island, the occasion being the two hundred and fortieth anniversary of the handing over of the deeds of that old town to the English, by Massasoit. The festivities were given piquancy by illustrative evidence of the great change which has come over New England life in this interval. Two venerable citizens of the town sat in the hall, one of them carding wool with the old-fashioned hand cards, which were simply a pair of stout brushes with metal teeth, while the other spun the woollen rolls he made into yarn on one of the old-fashioned spinning-wheels, still a familiar object to many as it stands in the garret of the farm-house in which they were born. They were showing the new generation how our ancestors made both ends meet in the days when New England was an outpost in the civilization which dominates the western world to-day. The interval has brought a marvelous change, which affects the whole social, commercial, financial and industrial life of our people. In no phase has this change been so marked as in the matter of the making and the distribution of the clothes we wear.

It is the purpose of these chapters to trace the several steps of this evolution, as related to the manufacture of wool. To do this intelligently it will be necessary to allude to some features of New England life which are only indirectly related to our special subject; but thereby it will be possible to show that the wool industry has been one of the most important and interesting factors in the development of the New England states. To indicate the manner in which this particular industry has been related to our general progress, has twined itself about the whole civilization of New England, and has contributed to determine the economic conditions of that civilization, is the purpose of this essay.

At the outset, and as a foundation upon which to build our superstructure, it is desirable to state, concisely but comprehensively, the present status of this industry in New England, as contrasted with other industries and other parts of the United States. We shall depend upon the data supplied by the eleventh census of the United States, a census which possesses peculiar significance in its relations to the wool manufacture, for it marks the completion of the first century of the introduction of the industry into the United States by the modern methods of mechanical manufacture.

New England manufactures more than one-half of all the woollen goods (exclusive of hosiery and knit goods) made in the United States. The value of the products of New England woollen and worsted mills in 1890 was \$139,302,134, and for the whole country the value was \$270,527,511. This is an unique pre-eminence, but it is less striking now than at any earlier date. At every previous census the proportion of New England was still larger, and it will be a part of our duty to inquire whether there is danger that this industry may slip away from us, as some others have done, and are doing. At the present time our right to boast remains, even though it may be tempered with apprehension.

Of the one thousand six hundred and ninety-three mills in operation in 1890, New England possessed five hundred and eighteen. These figures, however, have no significance, for in New England many of the mills are very large, while outside most of them are small. This is shown by the fact that of one hundred and fifty-seven thousand nine hundred and twenty-three operatives employed, seventy-nine thousand and sixty-three were at work in New England; and of the \$245,886,743 of capital invested in woollen manufacture, \$134,627,725 were in New England mills. The largest, most perfectly equipped and most successful corporations in the country engaged in wool are New England institutions, and some of them surpass in magnitude any similar establishments in the world.

Apportioning this mammoth industry between the several states, we find Massachusetts naturally at the head of the group, as well as at the head of all the states of the Union. This proud pre-eminence has been held by the old Bay State from the beginning; but Pennsylvania has been pushing her hard, of late years, and another census may reveal her clearly in the lead in the value of products, as she already is in the number of employees. New York holds the third rank, and then New England again asserts herself—Rhode Island, Connecticut, New Hampshire and Maine following in the order named, and only the aggressive development of New Jersey during the last quarter century keeps Vermont out of the next place of honor. Thus we see that the wool-manufacturing industry is chiefly concentrated in nine states, which nine states create \$249,150,000 out of a total value of \$270,527,511 produced in the whole country, and six of these nine states are the six little commonwealths crowded into the narrow northeast corner of the biggest country in the world, with barren and rocky soil, without coal, iron or raw materials among her products, and with the transportation facilities, in internal commerce, greatly against them. One does not need to look beyond these facts for a sufficient eulogy of the New England character. Our people have found this industry suited to their situation, appealing to their highest industrial and commercial qualifications by its peculiar difficulties and its demands upon superior energy and intelligence, and they have made the most of it, to the exceeding gain of all parts of New England and all classes of her citizenship. No state better illustrates the capabilities of development in any manufacturing line than little Rhode Island, smallest of all our states, save one, in territory, yet standing only fourth from the top in wool manufactures, and second only to Massachusetts in cotton.

Among all the industries in New England, the wool manufacture is second in importance to none other save only the cotton manufacture, and it is not many millions behind that. It far exceeds the boot and shoe industry, not only of New England, but of the whole country, and the iron and steel industries in all their branches. Surely, therefore, it is an industry which should continue to be cherished by our people, and one in whose history among us there should be felt the deepest interest.

Thus we see that New England, in which the wool manufacture by the factory methods was first introduced, remains, as it has always been, the chief seat of the industry in the United States, producing, so far as our clothing alone is concerned, as large a share of it as all the rest of the Union combined. Thus we see that this industry is one of the chief sources of the present material prosperity of these commonwealths.

It will be interesting to discover how this came to be the fact; what special reasons have made the wool manufacture semi-indigenous among us; the methods by which we have contrived to retain this supremacy, and the probabilities as to our continuing to retain it. There are no natural advantages, peculiar to any section of New England, which have led to the concentration of this industry in our midst. Not even in the matter of water-power, can we claim any natural superiority, as a manufacturing section, over any other parts of the United States. Something in the character of our people, something in the peculiar family traits of those manufacturers who have especially devoted their lives to this industry, has been largely responsible for it. But there are other reasons, which, separately or together, have been potent; and it is necessary to go back to the beginning and discover the relations of the domestic wool manufacture to the economic status of the first settlers of New England.

We have a guide in this inquiry who has traversed the ground with conscientious fidelity, burrowing tirelessly into old records, manuscripts and what not, to discover just what our forefathers knew about the manufacture of wool, just how they conducted it, and the part it played in their domestic economy. I refer to Mr. William B. Weedon's interesting volumes on "*The Social and Economic History of New England*," the author of which, himself a practical wool manufacturer and a descendant of another, took a personal pleasure and pride in unearthing the hidden history of this phase of our industrial genesis. Mr. Weedon has constructed a graphic picture of the original New Englander: what he ate, and how much it cost him; what he wore, and how he made it; what he coaxed from the reluctant soil, and for what he exchanged it. In this picture appear everywhere the signs that their clothing occupied a large share of the attention of our forefathers. After the demand for food was satisfied, the clothing came next, in the order of importance, here as everywhere else, and more truly here than in most climes, for protection against the ravages of the bleak New England climate was no easy task at a time when nearly everything men and women wore had to be made at home.

It was natural, in view of the climate, that wool should be the chief of the textile fibres in the colonial economy of New England. We read comparatively little about cotton or flax, and nothing at all about silk. Cotton was hardly known in the colonies. Flax was more abundant, and much of the household weaving was done on linen warps; but in those early days, wool was the practically universal clothing; and the problem of how to obtain it, in quantities to meet the requirements of the Puritan fathers and mothers, was one which much perplexed their souls. There do not appear to have been but three thousand sheep in Massachusetts in 1640, but the number increased rapidly; there were constant importations from England; the greatest care was taken in breeding and keeping them; orders were passed by the General Court forbidding their exportation "to any foreign place or port;" the killing of sheep by dogs was restrained under the severest penalties; the herding of sheep on the commons was permitted, and this became a very general practice, the sheep being watched and guarded by a common herdsman. Despite every effort of state and individual, there never came a time during the colonial period when wool was not a relatively scarce commodity, and the supply behind the demand.

Later in the history of New England (1793-1809), some very earnest and notable efforts were made by public-spirited citizens, prominent among whom were William Foster, of Boston, Col. David Humphries, of Connecticut, and Hon. William Jarvis, of Vermont, to improve the character of New England wool by the introduction from Spain of Merino rams; and later by an abortive attempt to domesticate the Saxony sheep, producing the finest quality of wool. The New England farmers did not take kindly to these efforts, and have never since taken kindly to them—more's the surprise and the pity, in view of the number of abandoned farms all over the New England states. The best counting the Department of Agriculture at Washington can do fails to reveal more than a million and a quarter of sheep upon all the New England hillsides in the year of grace 1896, when there ought to exist there, judging from the experience of England—an island no bigger than our little New England—no less than twenty millions of sheep. The New England farmers never would see, from the colonial days down to this day, what to others seemed a self-evident fact, that there is no branch of agriculture so easily carried on, so well adapted to fit in with other branches, so profitable, in comparison with the outlay required, and so susceptible of indefinite and advantageous expansion. I recall the amusing confession made by Hon. John E. Russell, of Worcester, at a stated meeting of the Massachusetts State Board of Agriculture in 1891, at which Hon. James I. Grinnell, of Greenfield, opened the proceedings with an address on the "History of Sheep Husbandry in Massachusetts." Mr. Russell stated that eleven years previously he had been elected secretary of the State Agricultural Board, and had publicly stated at the time, and several times subsequently, that if at the end of five years he had not increased the sheep in the commonwealth by the number of half a million, he should feel that he had been secretary in vain. Then he added, with a dash of humor and pathos combined, "At the end of seven years I retired from the office, and there were then about one-half as many sheep in the commonwealth as when I began to advocate sheep husbandry." And there are not one-half as many sheep in Massachusetts to-day as there were in 1860, when the total number was not one-half as large as it was in 1840. Mr. Russell was right when he said that sheep should be kept in New England, first, for lambs; then, for mutton; then, for the improvement of the land (for they are the best scavengers); and finally, for their wool, the price of which is so much added to the profits. New England farmers don't see it so; and inasmuch as this is not an essay on agriculture, we will leave it there, and "return to our muttons"—or, rather, we will leave the mutton for the manufacture.

At the beginning, every New Englander was literally his own weaver, and the wool manufacture was for many years unknown outside the household. The farmer raised a few sheep; he clipped and washed their fleeces, while the wife and the daughters made the yarn and wove the coarse fabrics on the hand-loom. This was the nearly universal occupation of the long winter evenings, which are now spent at the opera, the theatre and the social gathering. The first variation in this household manufacture came with the introduction of the outside fulling mill, for the preparation of the cloth after it had been woven. This phase of the manufacture was naturally the one to first gravitate outside the household, for it required appliances not convenient to have or easy to handle at home. I have indeed seen somewhere an interesting description of a method of home fulling which prevailed to a considerable extent in the New England towns in the seventeenth and eighteenth centuries, just as the corn-husking bees and the barn-raising gatherings still prevail in many localities. When the cloth of the season was woven, the young people were invited to the house, the kitchen floor was cleared for action, and in the middle were placed

stout splint-bottom chairs in a circle, connected by a cord to prevent recoil. On these the young men sat with shoes and stockings off and trousers rolled to the knee. In the centre were placed the cloths, wetted with warm soap suds, and then the kicking commenced by measured steps, driving the bundle of goods round and round the circle, until they were shrunk to the desired size. Then the girls, bare to the elbows, rinsed and wrung out the flannels and blankets, and hung them on the fence to dry. It is probable, however, that most of the early fulling was done in the obvious way, by simply beating the cloths with sticks.

Apparently the first fulling mill in the colonies was erected as early as 1643, in the village of Rowley, Mass. Here had settled in 1638, a colony of twenty or more nonconformists from Yorkshire, England, under the spiritual and business charge of Rev. Ezekiel Rogers. They had been trained to the cloth manufacture at home, and they appear to have been the very first in New England to undertake the making of cloths for general sale, outside their individual wants. They brought with them from England the gearing for a fulling mill, which was erected in 1643 by John Pearson at the head of tide-water on Mill river, and was still running in 1809, when one of the cedar tenter-posts remained in use still perfectly sound. A second mill was built at Watertown in 1662, by Thomas Leveran, a cloth-maker from Dedham in Essex, England. We note others at Andover in 1673, and also, through the Ballards, in 1689; at Ipswich in 1675; at Salem in 1675; Barnstable gets one in 1687; and in the same year Peter Cheney built a fulling mill at Parker's Falls in Byfield, to full "ye towne's clothe at ye same terms that Mr. John Pearson doeth full clothe." This opposition mill was subsequently purchased by Pearson, whose family continued for several generations to full the cloth of local household manufacture.*

Thus as time passed, the fulling mill became frequent, located always on some stream, and generally operated in connection with a grist-mill or a saw-mill. At a still later period these fulling mills were a part of the industrial paraphernalia of every village. Gradually they became carding mills as well as fulling mills, where the wool of the farmer was carded into rolls, convenient for the spinner, taken home to be spun and woven, and then brought back to the mill to be fulled by the clothier, as he was called. Thus we have the first step in the evolution of the textile manufacture away from the family household character. As recently as 1820 and 1825 the trade of the clothier was as distinct as that of the hatter, and as necessary an adjunct of every well-organized community. Both have long since disappeared, although it is worth noting that there still remain in remote districts in the state of Maine, and possibly in other New England states, little carding mills, to which the locality farmers still carry their wool to be made into rolls, which the wives still spin and weave, all unconscious that the big factories of New England can supply them with a better article at a far less cost. The differentiation of the household industry extended beyond those carding and fulling mills at an early date, for we find records of the purchase of yarns to be woven in the household. In 1684 Gabriel Harris, at New London, left by will "four looms and tacklings, and a silk loom," and it is a fair inference that his business consisted in weaving custom work on these five looms.

The time came when the homespun products were not sufficient to meet the wants of the colonies, and there began to be fears of a scarcity, which were stimulated by the export duty of 3s. 4d. on each piece (twenty-eight yards) of woollen broadcloth, which the English government laid in 1660, at the same time prohibit-

* Weeden's "Social and Economic History of New England."

ing the export of sheep, wool, and woollen yarns. It is not difficult, under the circumstances, to account for the law which was passed by the Massachusetts General Court in 1656, making spinning and weaving compulsory. The selectmen in every town were ordered by this statute to assess every family for one or more spinners, or for a fractional part, "that every one so assessed do after this present year 1656 spin for thirty weeks each year, a pound per weeke of lining, cotton or wooling, and so proportionately for halfe or quarter spinners under the penalty of 12d. for every pound short." This legislation was not more patriarchal in its character than many similar statutes, passed in England before and during this century, which commanded that men should be buried in woollen shrouds, regulated the length and color of goods, and even fixed their prices. Such laws could not have been necessary to foster among the colonists the development of an industry so essential to their personal comfort. By the end of the seventeenth century the household woollen industry had so grown beyond the household that woollens began to be bought and sold between the several colonies, and the results appeared in the diminution of the imports of woollens from the mother country, although the time never came when the New England colonies made clothing enough to cover their own backs, unaided by imports. It was no part of the purpose of the British government that they ever should; and accordingly, in 1699, a very stringent decree was adopted, declaring that "no wool, woolfells, shortlings, morlings, wool flocks, worsted, bay or woollen yarns, cloath, seye, bays, kerseys, says, frizes, druggets, cloath seyes, shalloons, or any other drapery, stuff or woollen manufactures of any of the English plantations in America shall be laden on any vessel," etc. Nor could any of them be laid on any horse or carriage "to be transported to any other place whatsoever." This was the first of the long series of restrictive decrees and statutes designed to keep America in industrial and commercial bondage to the mother country, which culminated, three-quarters of a century later, in the Revolution. The English were more sensitive about this nascent woollen manufacture in America than about any of the other industries which were at the same time pushing their roots quite as deeply into the soil. This particular industry was then the pet and the pride of the mother country.

This decree was no more successful than later ones, in stopping the growth of an industry which was born in the bone of our ancestors. In 1705 Lord Cornbury, then Governor of New York, called the attention of his superiors to the astonishing and reprehensible fact that he had actually "seen serges made in Connecticut that any man might wear;" and again, in 1707, he excitedly reported that "they make very good linen for common use, and as for Woollen, I think they have brought them to too great perfection already." He was nervously anxious that these nascent textile industries should "be taken care of in time." They were taken care of, though not in the fashion that Cornbury desired. The records of the eighteenth century are full of evidences that the woollen manufacture was fast becoming a source of wealth to those who pursued it. How the public looked upon it is fairly illustrated by the case of the weaver in Chelmsford, who was granted thirty acres by the town, as an inducement to set up weaving there.

When the Stamp Act came, in 1766, it served as a tremendous stimulus to this particular manufacture. The pride of the colonists was touched, and the reaction was naturally in the direction of a growing determination to make and wear domestic cloths. They felt themselves to be industriously independent of Great Britain in every respect but this, and every endeavor was made to supply this deficiency. It became a social as well as an industrial question, and the test of patriotism was the wearing of domestic-made clothes. Much enthusiasm was created by the appearance

of the president and the first graduating class of Brown University, at the commencement exercises in 1769, in garments made up from the wool grown within the borders of the Rhode Island Plantation. The Harvard graduates followed this example the next year. If our modern college students had more of the feeling which prompted that demonstration, they would not have so much occasion for declamations against a protective tariff.

The spinning bee was one of the most popular forms of giving force and effect to the feeling which animated men and women alike. In Providence the "Daughters of Liberty" had all-day sessions, at which they spun, and no doubt talked and flirted as they spun. This demonstration was obviously in imitation of an occurrence in Boston in 1749, on the occasion of the fourth anniversary of the "Boston Society for Promoting Industry and Frugality," when three hundred "young female spinsters" spun at their wheels on the Common. In Northboro', Mass., forty-four women spun two thousand two hundred and twenty-three knots of yarn, which they presented to the soldiers, who no doubt gave it in turn to their mothers and sisters to weave into uniforms. The Providence example was catching, and we read of these spinning-bees in Boston, in Newport, and at other points throughout New England. The young lady of the closing years of the nineteenth century, so eager to find a "function" in life, thus had an admirable prototype in the eighteenth century girl, whose nimble feet and fingers kept the spinning-wheel in constant motion.

And so we come down to the period of the Revolution—a war prompted almost as much by the desire for industrial independence as by the determination to be independent politically. If we could read the hearts of the great mass of the men who stood behind the leaders in that Revolution, we should find that these two ideas were always working together, and that the one sustained and intensified the other, if indeed it did not create it. The lesson which Great Britain learned from that tussle with the American colonies was to keep her hands off the industrial development of the colonies that were left to her.

Notwithstanding the primitive character of their appliances, our colonial ancestors, if we can judge from family portraits, were very presentably clothed, especially when they were dressed for social occasions. Very excellent examples of colonial broadcloth survive to this day to bear witness to the care and skill with which wool was handled. In the extract given above from a British decree appears an enumeration of the various varieties of goods made and worn in those days, and it is certainly large, in view of the conditions. The great bulk of the household production, however, was of two kinds, one a strong, coarse, all-wool cloth, three-quarters wide, which was sometimes fulled, but often worn undyed and undressed, and the other known as "linsey-woolsey," and known by that name to-day in the few remote sections of country where the hand-loom still asserts itself. This cloth was made generally upon a linen warp, on account of the scarcity of cotton, with a thick wool filling; being subjected to a vigorous fulling, it was as strong as iron, and would resist the New England suns and storms for season after season, and literally from generation to generation. McMaster writes that the colonial New Englander, for the Sabbath and state occasions, "had a suit of broadcloth or corduroy which lasted him a lifetime, and was at length bequeathed, little the worse for wear, with his cattle and his farm, to his son. The suit in which his neighbors commonly saw him was of homespun, or linsey-woolsey; and the entire sum annually laid out in those days by a New England farmer on clothes for himself, his wife and his eleven or thirteen children was ridiculously small."

CHAPTER XXI.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE ADVENT OF THE SCHOLFIELDS, AND THE EARLY WOOLLEN MILLS.



HE non-importation agreements and the outbreak of the Revolution were necessarily a great stimulus to the household manufacture of woollens, and there was a universal recurrence of the patriotic enthusiasm aroused by the Stamp Act; but the war of the Revolution had not far progressed, before the people and the Continental Army had occasion to realize that the lack of proper facilities for supplying clothing was the weakest point in their outfit for the struggle upon which they had embarked. To the very end, the difficulty of keeping the army properly clothed was always present, and always a source of embarrassment. It impaired the health and morals of the soldiers, and at times even endangered their subordination.* Congress was frequently compelled to appeal to the people to increase their supplies of wool and other materials, and to promote the manufacture of cloth for the protection of their ragged defenders in the field. In November, 1775, it resolved that clothing be provided for the army from the continent, and paid for by stopping one and two-thirds dollars per month out of each soldier's pay, and that every man who brought into the camp a good blanket, should be allowed two dollars therefor, and permitted to take it home with him after the campaign was over. In the following June each colony was called upon to supply a suit of clothes for each soldier in the army, to be paid for by Congress. The scarcity of woollen cloths is indicated by the proviso that the waistcoat and breeches might be made of deer leather, if the same could be had on reasonable terms. The fact appears to be that a large part of the army, in the early years of the war, was clad chiefly in linen, and that the hardships of winter campaigns were greatly intensified by that fact. Finally, the several states were advised to enact laws empowering the seizure, for the use of the army, of all woollen cloths, blankets, linens, shoes, stockings and hats, wherever they might be found, to be paid for at a stated price by drafts on the Clothier-General. All these expedients failed, for the reason that the cloths did not exist, and it was not until a subsidy of six million livres had been granted by the King of France, that suitable clothing, mostly English-made cloth, was purchased in Holland and sent over to the States.

There could have been no more effective illustration of the fact that a nation is fatally weak, in time of war, which does not possess within itself all the essentials for clothing its own armies. It is strange that such an experience did not stimulate the industry of wool manufacturing; but, outside the city of Philadelphia, I cannot learn of any systematic effort to establish a woollen mill, independent of household co-operation, until 1788, when a subscription paper was circulated in the towns of Hartford, Windsor, Farmington, Weathersfield and Middletown, in the state of Connecticut, for the purpose of raising a fund for establishing the manufacture of woollen cloth in Hartford. The capital proposed was £1250, in one hundred and twenty-five shares of £10 each, and the subscriptions were made by thirty-one individuals, among whom were Col. Jeremiah Wadsworth, Thomas Seymour, Peter Colt, Nehemiah Hubbard, George Starr, Jesse Root, and Oliver Wolcott, several of whom had been

* Bishop, vol. i., p. 390.

members of the Continental Congress or otherwise distinguished in the affairs of the state. The company was organized on April 15th, with a board of directors, and Daniel Hinsdale was appointed agent. On May 2nd, "The Hartford Woollen Company" announced itself ready for business, "as soon as the agent could collect sufficient material." Cash would be paid for sheep's wool, and as the business was "set on foot with the aim to promote the interests of the public as well as private advantage," it was presumed that farmers would be careful "to rear up their lambs and increase the number and improve the breed of their flocks."

At the May session the General Assembly passed a resolution exempting the manufactory from any tax or assessment on the buildings it used, for the term of five years. It also exempted all persons who constantly labored in the manufactory from the payment of a poll tax for the period of two years. By January, 1789, cloth enough had been made to justify placing it upon sale. These cloths were not of bad quality, in view of the ramshackle machinery and unskilled labor employed and the poor quality of the raw material. But English goods, after paying the duty of five per cent., undersold them in the town where they were made, and gave much better satisfaction besides.

December 10, 1794, the Hartford Company announced a dividend of fifty per cent. on the original shares, to be paid in the finished goods of the Company, and this was the first and only dividend paid until the closing of the manufactory on August 24, 1795. At that date the Company announced that the time had expired for which the proprietors had engaged to pursue the business, and that a final settlement had become necessary. The property was subsequently sold at auction, and consisted of forty pieces of finished goods, four thousand pounds of wool, eight looms, two hand-carding machines, one spinning-jenny, one twisting machine, and other implements, dye-stuffs, etc.

This was a brief and inglorious existence; but while it lasted, the Hartford factory was the talk of the neighborhood, and indeed of the whole country, aided not a little to its notoriety by the interest General Washington took in it. Colonel Wadsworth was a member of the First American Congress, and he took with him to New York, on his way to the President's inauguration, two pieces, of thirty yards each, of Agent Hinsdale's best cloth—one for the first President and the other for the good Martha. The cloth was dark brown in color, and it was quickly made into a suit, which, with white silk stockings, also of American manufacture, and plain silver buckles in his shoes, composed Washington's dress on that great occasion. Vice-President Adams wore a suit made from the same cloth. When General Washington reached Hartford in the following October, on his New England tour, he made a careful inspection of the woollen factory, and wrote enthusiastically about it in his journal. He ordered a new suit of broadcloth ("not of the first quality as yet, but they are good") for himself, and a whole piece of "everlasting," to make breeches for his servants. He wrote to General Knox, when he got his suit, that "it exceeds my expectations." So we have the highest possible authority that the Hartford people knew how to make cloth, if they did not know how to make money. The "Hartford gray," one of their products, became a really celebrated cloth and was very popular.

The Hartford Company had only a few months the start of a woollen mill at Stockbridge, Mass., which began to make cloths in 1789, and another at Watertown, Mass., started in the same year. It is a little remarkable, in view of the existence of these mills, that Alexander Hamilton, in his famous "Report on Manufactures," made to Congress in 1791, should not have included the wool manufacture among

the industries which had already passed beyond the household stage. He speaks of it as still only a part of "household manufacturing," and he adds: "Great quantities of coarse cloths, coatings, serges and flannels, linsey-woolseys, hosiery of wool, cotton and thread, coarse fustians, jeans and muslins, checked and striped cotton and linen goods, bedticks, coverlets and counterpanes, tow linens, coarse shirtings, sheetings, toweling and table linen, and various mixtures of wool and cotton, and of cotton and flax, are made in the household way, and, in many instances, to an extent not only sufficient for a supply of the families in which they are made, but for sale, and even in some cases for exportation. It is computed in a number of districts that two-thirds, three-fourths, and even four-fifths of all the clothing of the inhabitants are made by themselves." At a later point in the report Secretary Hamilton argues that "to encourage the raising and improving the breed of sheep at home and promote an abundant supply of wool of good quality would certainly be the most desirable expedient" for the purpose of "bringing to maturity this precious embryo" of wool manufacturing.

Three years later an event occurred from which we may date the advent of the embryo into actual life. The Hartford people are entirely right in claiming that theirs was the first woollen factory in New England. I would not interfere with their pride in that fact if I could; yet I agree with ex-Governor Royal C. Taft, of Rhode Island, in assigning to the Scholfield mill at Byfield, Mass., started in 1794, the honor of being the first American woollen factory in which the attempt was made to manufacture woollens by modern machinery and power. The use of power has come to be regarded as essential to the constitution of a factory. We will not quarrel over words with the antiquarians, and gladly accord to Connecticut all the honor that certainly belongs to her, by reason of an industrial experiment that was, up to that moment, unique in our history.

Two brothers, Arthur and John Scholfield, of Standichfoot, in Saddleworth, Yorkshire, England, arrived in the United States in May, 1793, in the ship "Perseverance." These two brothers occupy a relation to the wool manufacture of the United States similar to that of Samuel Slater to the cotton manufacture. If he was the father of the American factory system, as applied to cotton, the Scholfields were the fathers of the American woollen mill. Slater had preceded them by a few years; but his successful introduction of cotton-spinning by the Arkwright machinery at Pawtucket had not been achieved at the time of their coming, and they lacked the incentive of any previous example in any branch of textiles to stimulate them in their plan to teach the American people how to manufacture wool mechanically. They had no appreciation of the tremendous significance that lay hidden in their enterprise. They were simply a pair of intelligent artisans, of somewhat adventurous spirit, who conceived the idea that they might better their fortunes by going to the new world, and there turning to account their special knowledge of the wool manufacture, as then conducted in England. By reason of the statute which forbade the exportation of any textile machinery from Great Britain, or any models or parts of any such machinery, they carried their entire capital, like Slater, in their heads.

Shortly after arriving, the Scholfield brothers, in partnership with John Shaw, a spinner and weaver who had accompanied them from England, began the manufacture of woollen cloth by hand in Charlestown, Mass. John Scholfield, being a skillful mechanic, constructed their simple machinery, which consisted of one hand-loom and a spinning-jenny of forty spindles. The first production of this loom, consisting of twenty-four and one-half yards of broadcloth, was sold for £16.16s, as shown by books which are still preserved in the Scholfield family. Their industry, expertness

and novel tools attracted the attention of Jedidiah Morse, the author of "Morse's Geography and Gazetteer;" and through his influence several wealthy citizens of Newburyport were led to believe that the establishment of a woollen mill in their town would be a profitable and advantageous undertaking. The young men were persuaded to remove thither, taking with them their machinery. They at once began the construction of a carding machine, which was first put together in the stable of the somewhat celebrated "Lord" Timothy Dexter, and there operated by hand, in order that the persons interested in the new enterprise might judge of its practicability. This was in October, 1794, and this mechanism was the first carding machine for wool ever constructed or operated in the United States, and upon it were made the first spinning rolls carded by machinery.

The success of this novel mechanism aroused great interest; a company was immediately formed, in which thirty prominent residents of Newburyport participated, among them Theophilus Parsons, the jurist, and William Bartlett and Moses Brown, wealthy merchants of that town. The following winter the Massachusetts Legislature granted a charter to "The Proprietors of the Newburyport Woollen Manufactory," with an authorized capital of £10,000 real and £80,000 personal estate, and a location for the factory was immediately secured at the falls on the Parker river in Byfield. A three-story mill, one hundred feet long and forty feet wide, was erected, additional machinery was built, and operations begun early in 1795. In addition to the machinery already mentioned, there were two carding machines, of two cylinders each, undoubtedly modeled after the mechanism then used in England for the carding of wool. They were the models, also, of numerous other carding machines, subsequently constructed by the Scholfields either for sale or for their own use; and in the course of time a number similar to them were in operation in different parts of New England, where interest in the new mechanism was universal.

The Byfield Mill, notwithstanding the favorable auspices under which it started, was a financial failure. To what degree the Scholfields were responsible for that failure we are not informed; but their subsequent career leads to the conclusion that they were not men of large enough pattern to make the most of their peculiar opportunities. In 1799 they sold out their interest in the mill and removed to Montville, Conn., where they leased a valuable water-power at the mouth of Saw Mill Brook, since known as the Oxoboro river, and built a factory, in which they continued the manufacture of woollen cloths. In 1801 Arthur Scholfield sold out his interest to his brother John, and removed to Pittsfield, Mass., where he built for himself another carding machine and began manufacturing rolls, but devoting much of his time to building and setting up carding machines for others. His going to Pittsfield was an event of unique importance to Berkshire county, for it undoubtedly led to the subsequent rapid development of the woollen manufacture of that neighborhood—a development which has continued ever since, the county at one time employing more woollen machinery than any other in the state.

In the files of the Pittsfield *Sun* are found certain advertisements of Arthur Scholfield, which are interesting, as showing the prices he obtained, not only for carding, but for his machines. Here are two of them:

"PITTSFIELD FACTORY, April, 1805.

"Good news for farmers, only eight cents per pound for picking, greasing and carding white wool, and twelve and a half cents for mixed. For sale, Double-Carding machines, upon a new and improved plan, good and cheap. Also, a few sets of cards made by the Shakers [evidently hand cards], and warranted good.

ARTHUR SCHOLFIELD."

"PITTSFIELD FACTORY, 1806.

"Double carding machines, made and sold by A. Scholfield for \$253 each, without the cards, or \$400 including the cards. Picking machines at \$30 each. Wool carded on the same terms as last year, viz.: eight cents per pound for white, and twelve and a half cents for mixed; no credit given.' '*

The subsequent history of Arthur Scholfield has an element of pathos, as told in certain letters to his brother John at Montville. The two brothers suffered, in common with all other New Englanders, from the embargo laws, as this letter indicates:

"PITTSFIELD, July 11th, 1808.

"Brother John Yours of the 4th June is rec'd. You say you hardly know how you are doing for there is an Imbargo laid last Dec'r, and it still continues—the Imbargo is here too, and like to stay for what I see. It has swindled me out of about 1500 dollars—for besides what I shall loose by failures I have 22 Machines on hand besides Pickers—they were all ingaged last summer, and if times had not turned, should have had the money for them now. If I had left Buiseness the spring before last it would have been much to my interest but at that time the Imbargo was not thought of, except by King Jefferson and his party, and as they cant do rong we must put up with it—I have often thought you might have done Better by moving back into the Country, but as things are now there is no doing anything anywhere—have not heard from home a long time.

ARTHUR SCHOLFIELD."

Nor did times fare any better after the War of 1812 was over, and the return of peace re-opened the American ports to the English woollens. This second letter reveals the increasing financial distress of Arthur, and hints at a plan for appealing to Congress for recognition of his services as the first to introduce the woollen manufacture in this country. This plan was subsequently abandoned on the advice of his brother, who argued, no doubt truly, that such an effort must prove a failure.

"PITTSFIELD, Apr. 20th, 1818.

"Brother John, Sir yours 20th Sept. 1817, was duly recd, the reason I did not write sooner was I expected to have been able to pay Hicock without calling upon you again but finding it impossible I last week wrote to Isaac to know what situation that Legacy was in perhaps you have not heard that he has sold the goods to a man in Boston that had failed this he wrote me long ago and I thought by this time he might know something more about it but he writes me now that he has not rec'd a cent nor does he expect he ever shall but I don't wish you to distress yourself on my act, tho Hicock is as needy and poor as any of us his family has been sick all Winter I was in hope our business would have been a little better by this time I have had a hard rub through the last winter but am in hope of doing a little better for the futer if we have our health—there is one thing I want to acquaint you with and have your opinion and advice about—I have been advised by my friends to apply to Congress by a petition as we were the first that introduced the woollen Business by Machinery in this country and should that plan be adopted I have but little hopes of success but they say if it does no good it wont doo any harm but at any rate I should like your opinion and advice about it the thing was suggested to me towards the last of the session, so that I had not time to write you on the subject and do it on my own account I thought it would not be doing you justice as we were both equally concerned, although I am personally acquainted with the member from this County and have faith to believe he would exert himself—Youl think of the thing and write me and accept of my best wishes for yourself and family.

ARTHUR SCHOLFIELD."

I have gone thus fully into the history of Arthur Scholfield because it illustrates that the pioneers of the textile manufactures in this country were not all of them so successful as their merits deserved, or as those who have followed in their foot-

*I am indebted for these advertisements, and also for the Scholfield letters which follow, to Hon. Royal C. Taft's monograph, entitled, "Notes on the Early History of the Woollen Manufacture in the United States," published in 1882.

steps often are. The memory of Samuel Slater is revered, his name is a household word throughout New England, while the Scholfields, who rendered an equally valuable service to a kindred industry of equal importance, are forgotten, except by the antiquarians.

John Scholfield, whom we followed to Montville, Conn., continued to operate a woollen mill in that town until his death in 1820. He seems to have had a passion for building new mills. In 1806 he bought a water privilege at Stonington, and built a two-story mill in which he placed two double carding machines, operated by water-power, two spinning-jennies and a billy, operated by hand. In 1813 he purchased another mill in Montville, located four miles above the mill in which he had first manufactured, equipping it with woollen machinery; and in the following year he purchased still a third mill privilege at Waterford, three miles above New London, and there he built another mill, which he placed in charge of his son Thomas. These mills were all small, but that they were thriftily managed is evidenced by the fact that when he died John Scholfield left them free of all incumbrance, the one at Waterford to his son Thomas, the one at Stonington to his son Joseph, and the Montville mill to his wife and younger children. The Montville mill, operated by his grandson, Benjamin Scholfield, until quite recently, was one of the first in which was manufactured the fabric, indigenous to Massachusetts, known as the "satinet;" and the "Scholfield satinet" was long a household word throughout New England. There has been some dispute as to who originated this particular fabric, and probably that distinction does not belong to the Scholfields. James Beaumont, an English emigrant, who came to this country in 1800, and established the second cotton factory in the state of Massachusetts, subsequently, in another mill on the Neponset river, erected in 1808, manufactured all-wool cloth and also satinets, regarding which latter he says in his autobiography: "For this latter article I got great credit, making my own cotton warps of Sea Island cotton, and employing English workmen who beat them up well in the hand-loom. I sold the finest of them for three dollars and fifty cents a yard, both before and during the War of 1812." Abraham Marland began making satinets at Andover in 1811, and Delano Abbott made them at Vernon, Conn., in 1812. Mr. Bagnell concedes priority in this manufacture to Mr. Beaumont, on the strength of his autobiographical record.*

To recur to the Byfield enterprise: it is worth noting that this mill site, where the machine carding of wool by water-power was first undertaken, and which was located within two miles of the site of the first American fulling mill, erected by John Pearson in 1643 for the Rowley weavers, has been almost continually used as a textile manufactory down to the present day. After the Scholfields withdrew from the enterprise, it was sold by Mr. Bartlett to John Lees, who had come over the water with the Scholfields and had succeeded them in the management of the mill. Lees lost faith in wool manufacturing as a business, and that is not at all surprising, for since the close of the Revolutionary War, the influx of British woollens had begun and steadily increased. The English goods were better than any that could be made at Byfield, and there was no longer any patriotic motive to restrain the people from giving them the preference. Lees converted the mill into a cotton factory—smuggling from England, according to Bagnell, drawing and spinning frames for that purpose. At this business he was, for a time, successful, but the sheriff caught him in 1823; others carried on the manufacture of cotton with varying success, and finally it was again converted into a woollen mill after the original structure had been burned in 1859, and a new mill erected, and there the woollen manufacture is still carried on.

* "The Textile Industries of the United States," by William R. Bagnell, M.A., 1893.

Congress had done little or nothing in the first tariff act of 1789 to encourage the development of a domestic woollen industry. It placed a duty of but five per cent. upon woollen goods. It is clear that there was little expectation, at that time, that this country could make any decided headway in this industry against the competition of the mother country, then developing its woollen manufacture with tremendous strides, by the successful application of the Arkwright cotton-spinning machinery to the manipulation of wool. Our people knew nothing of this machinery, had no access to it, and continued to make only the roughest kinds of homespun cloths, until the advent of the Scholfields in 1794. Unsuccessful as the Byfield enterprise was, it exercised a powerful and immediate stimulus, and led to an important differentiation in the industry. Once the Scholfields had taught our people how to make a carding machine that could run by water-power, thus relieving the women of the drudgery of hand-carding, similar machines began to be built in all parts of New England. Arthur Scholfield, as we have seen, went largely into the business of building cards. But he had no patents, and the mechanism was so simple that any machinist could construct them. The machine produced a card roll far superior to that made by hand, and it became the fashion for the farmer to carry his wool long distances, to the nearest carding engine, to be prepared for the home spinning and weaving by the improved method. From the old records we learn that the common prices charged for carding wool were seven cents per pound for common wool, with three cents a pound additional where the oil was found by the carder; twelve and one-half cents per pound for half-blood merino, and twenty-five cents for full-blooded merino, the charge for oil being the same in all cases. These prices seem fabulous to modern manufacturers, whose appliances are so perfect that the cost of carding is reduced to a small fraction of a cent.

The introduction of the carding machine was greatly expedited by improved methods of making the card clothing. The business of making hand-cards, for both woollens and cottons, had grown during the Revolutionary War to be one of the most important industries of Boston. The interruption of commerce had rendered it impossible to import these implements, which were as important a feature of the economy of a community as the spinning-wheel and the hand-loom. The urgency of the case led several of the colonies to pass resolutions "recommending and encouraging bounties to manufacturers of wool and cotton cards, iron wire," etc. Giles Richards established at Boston, in 1788, a factory driven by a windmill, in which he placed a machine which was thought a marvel in its day, capable of cutting and bending wire enough, in twelve hours, for two hundred and forty cards. This factory, and another in Boston operated by Amos Whittemore, sent cards all over the Union, making some twelve thousand dozens annually.

To Pliny Earle, of Leicester, Mass., undoubtedly belongs the honor of making the first machine card clothing in the United States. This he did for Samuel Slater, who had been annoyed and retarded in his business by the impossibility of properly clothing his cotton-carding machinery. Mr. Earle perfected his card clothing so successfully that his machinery was subsequently patented and used in England, the first of many inventions which the mother country has since had occasion to borrow from us. The immediate effect was to stimulate and hasten that revolution in the woollen manufacture which the Scholfield carding machine had begun; and carding mills everywhere became the appendages of the fulling and dyeing mills.

It is impossible, within the limits of a sketch of this character, to recount all the points at which carding mills were erected. We have seen that they became immediately numerous in the vicinity of Pittsfield, where there were a number of mills

which added spinning-jennies and hand-loom for the manufacture of cloth, which they put regularly upon the market. Sylvester Judd locates one of them at Hadley, Mass., as early as 1802, one in North Amherst in 1803, and another at the Lower Mills in Hadley, in 1805. In Worcester County, Mass., Joshua Hale began the carding of wool in 1803, and Peter and Ebenezer Stowell began to weave carpets and plaids in 1804, on six looms of their own construction. In 1805 Captain Abner Stearns erected a large building in West Cambridge, Mass., for the carding of rolls, where he carried on a successful business, which developed into a regular cloth manufacture, and prospered until the peace of 1815 destroyed his market. At New Ipswich, N. H., in 1801, James Sanderson, an ingenious Scotchman, established the first carding mill in that state, which developed gradually into a full-fledged woollen mill, whose products acquired a great reputation by reason of Mr. Sanderson's skill in the dyeing of indigo blue, an art, up to that time, practically unknown in this country.

It will be seen that the carding mill, rather than the fulling mill, was the real forerunner of the New England woollen mill as it exists to-day. They were apt to be found side by side, for one was a help to the other, and both required water-power. Both adjuncts, originally, of the household industry, they were frequently combined in one mill, and, when that combination was effected, the step to the spinning-jenny and the loom was short and easy; and thus we have the genesis of the American woollen factory.

The tendency to consolidate all branches of the industry under one roof early developed itself. It was a tendency entirely different from that which continued in England after the appearance of power machinery, and a tendency which has been accentuated in New England with the lapse of time. Our methods of manufacture, with nearly the same mechanical contrivances, are now entirely different from those which prevail in the island from which we inherited this industry. There the carding or the combing of the wool is a separate and distinct industry by itself; the spinning is another, the weaving another, and the dyeing and finishing still another. One manufacturer buys the wool, and sells it, in condition for spinning, to another, whose connection with it ends when he has put it into yarn, ready to sell to the weaver. This minute subdivision of the industry in Great Britain is an evolution of centuries, and a survival of the days of hand-manufacture, under which, just as at present, the spinner, the weaver, the dyer, and the fuller have each his distinct, well-defined field of work, into which the rules of the guilds forbade either of the others to encroach. It was a subdivision unaccompanied by any inconvenience, because of the close concentration of the cloth manufacture in particular localities. There were certain towns, of which the county of Yorkshire furnished the most notable example, where practically the only occupation of the people was some one of those connected with the cloth manufacture. As machine manufacture gradually drove out the hand-worker, this differentiation continued along lines established by immemorial custom, and there are but slight departures from it in England to-day, because experience leads men to believe that on the whole it is the most efficient and economical system of manufacturing.

The origin of the New England wool manufacture offers the widest possible contrast, and for reasons that are natural and obvious. The fulling mill and the carding mill were as essential to the economic complement of every considerable village locality as was the blacksmith's shop, the saw-mill and the grist-mill. They were originally built to serve a purely local purpose, and, for a long time after they had developed into a complete woollen mill, they continued to find the chief market

for their products in the immediate neighborhood. Distances were great and transportation expensive. Most of the original woollen mills of New England started with men whose ambitions at the beginning did not reach very far beyond their own vicinage. Necessarily these original mills were all located beside some stream, and the necessity of water-power often carried them into spots that would never be selected in this day and generation for such a purpose.

Some day we shall have a historian who will trace the influence of these streams in the upbuilding of New England—not alone the large rivers like the Connecticut, the Merrimack and the Androscoggin, which have made Holyoke, Lowell, Lawrence, Nashua, Manchester and Lewiston, but the smaller streams, like the Blackstone, Assabet, Hockanum, Cochico, Concord, Naugatuck, Winooski, Quennebaug, Stony Brook, Piscataquis, Saco and Cochickewick, which nursed these pioneer mills, as a mother her children. Around the mills which owe their existence to these streams, are clustered towns and villages, many of which, as the mills have grown and prospered, have come to depend chiefly upon them for their life and subsistence. The manufacturer so located, originally securing his wool from the neighboring farmers, was compelled to card it, to spin it, to weave it and to finish the cloth, because there was no one at hand to perform either one of these operations for him.

It is thus plain why the system of wool manufacturing in New England has developed along lines so wholly different from those the industry has followed in Great Britain. The system which has one hundred years of growth behind it is pretty firmly rooted. New England clings tenaciously to the methods of the forefathers in wool manufacturing, if not in other things. The system with which she began remains practically unchanged. Still there have been deviations from that system, and when we come to study the development of cities like Lawrence, Lowell, Providence, Holyoke, Rockville and a few more, we shall find the points at which this deviation is marked, and a tendency away from the old methods distinctly visible.

It is not possible, in a sketch of this character, to enumerate all the pioneer establishments which developed out of the neighborhood necessities of the period with which we are now dealing. In many instances, the record is obliterated. In others it has been preserved by the continuity of the enterprise on the same spot where it originated, in some notable instances carried on to this day by the descendants of the original founders. When making the statistics of the wool manufacture for the census of 1890, I endeavored to obtain a record of the original date of establishment of the mills reporting. The effort was not attended with complete success, for it appeared that in many instances the present proprietors were either ignorant of or indifferent to the genealogy of factories which had been in operation long before their day and generation. The earliest date returned was 1794, by E. E. Hilliard & Company, of Buckland, Conn., who trace the origin of their mill back to Aaron Buckland, who owned a mill there in the War of 1812, in which he wove blankets by hand for the soldiers. Mr. Bagnall has studied into this case with his usual microscopic diligence, and reached the conclusion that "the mill of 1794 was only a clothier's shop for the convenience of the residents, in the fulling and finishing of their home-spun cloths," and that it was about the turn of the century that the improved carding mills introduced by the Scholfields were first set up in this mill. It passed into the hands of Elisha E. Hilliard in 1832, and has since been uninterruptedly operated by his heirs—a record sufficiently unique to deserve this mention. The mill reporting the next earliest date was that of S. F. Cushman, of Monson, Mass., tracing its origin back to 1800.

The question remains whether the honor of being the first woollen mill estab-

lished in the United States, which has since been uninterruptedly operated, does not belong to the Peace Dale Manufacturing Company, of Rhode Island. Certainly this is the oldest existing establishment which has been operated continuously by the same family; and in that sense of the word it unquestionably belongs at the head of the list. The Peace Dale mill is situated upon the site of a primitive fulling mill which had been built and operated by Benjamin Rodman prior to the opening of the century. Here a carding machine, built after the Scholfield pattern, was set up in 1804 by John Congdon and John Warner Knowles; and it was about this time that Rowland Hazard's connection with the establishment began, he having some sort of partnership with Congdon and Knowles, and gradually attaining to the full ownership. He manufactured a yard-wide linsey-woolsey cloth, such as had been made in the households from the earliest colonial dates, but differing therefrom in the substitution of a cotton warp for the linen warp which had always, up to this time, been used.

In this mill, for many years after it was in successful operation, only the carding of the wool and the fulling of the cloth were undertaken. The woollen rolls were given out to people living in the vicinity to be spun by hand and woven on hand looms. Speaking of this primitive manufacture about thirty years later, Mr. Hazard wrote:

"In 1816 and later I used to employ scores of women to spin at their homes at four cents a skein, by which they earned twelve cents a day at most. The wool was carded into rolls at Peace Dale, and transported to and from on the backs of horses. Some time ago I stood in a manufactory in the same village, and took note of a stripling who tended two highly-improved jennies, from which he was turning off daily as much yarn as six or seven hundred women formerly spun off wheels in the same time."

About the year 1819 the spinning-jenny was introduced at Peace Dale. A thirty-mule jack purchased about that time was successfully operated by water-power, being the first spinning-jenny run by power ever operated in an American mill, so far as I have been able to discover.

The Hazard mill has other claims to an unique position in the history of New England wool manufacture. The Hazards were the first to undertake the manufacture of wool in Rhode Island by methods approaching the modern factory system; and on the spot where Rowland Hazard began the manufacture, in 1801, it has since been continued without interruption by his descendants. His sons managed the business down to 1866; it was then carried on by the sons of Rowland G. Hazard—Rowland Hazard and John N. Hazard—until 1892. Rowland G. Hazard, 2d, great-grandson of the founder, was elected assistant treasurer of the corporation (which was organized in 1848) in 1877, and is to-day the treasurer. The mills have thus been managed continuously for ninety-five years by four generations of the same family, a record so unique, in the shifting panorama of American industrial development, as to be worthy of this special record. We shall find it duplicated in one or two instances. The scarcity of such examples illustrates the precariousness of the business of wool manufacturing.

Another of the notable woollen mills of that period was that of Col. David Humphreys, who purchased in 1803 a mill privilege, on which were two fulling mills, in Derby, Conn., now within the town of Seymour, on the Naugatuck river. We have already alluded to Col. Humphreys' services to the industry through his efforts to improve the breed of sheep in New England by the introduction of the merino. Col. Humphreys continued the business of fulling cloths until 1806, when he erected a woollen factory, in charge of which he placed John Winterbottam, who came over

from Lancashire, England, for that purpose, the style of the firm being T. Vose & Co., Thomas Vose having the financial management, and Col. Humphreys being a silent partner. The business was successful, beyond the success of any similar mill that had existed in the United States, employing no less than one hundred and fifty persons, making it, I believe, the largest woollen mill that had yet been operated.

But it had another title to distinction. Col. Humphreys had been much in England, and had heard the grave complaints of the demoralizing influence of factory industry upon those engaged in it. He was about to transplant the factory system from the old to the new country, and he determined that, so far as in him lay, no such abuses as disgraced the early days of the system in England should be transplanted with it. At his instance the Connecticut Legislature passed an act constituting the selectmen of each town in which manufacturing establishments should be erected visitors to those institutions, with power to enforce the proper care of the health and the moral well-being of the employees. This law also required the proprietors to control the morals of their workmen, and to educate the children, "as other children in plain families throughout the state are educated." Schools were established at Humphreysville, prizes were given to those who excelled in their studies; and rewards were also given for proficiency in carding, spinning, weaving and cloth-dressing.* Model tenements were erected for the workmen, and gardens, owned by the proprietors, furnished all the vegetables needed by the occupants of this industrial paradise, for such the village of Humphreysville was, at its start, and for long years afterwards.

Col. David Humphreys was the founder of the New England factory village; and he built it upon a basis that explains much that is admirable to this day in the New England factory town. He was one of the most far-sighted and broad-minded men concerned in the building up of the industries that have taken root here. He believed that manufacturing was, in a large sense, a philanthropic enterprise; he was intent upon the industrial development of his country, and equally determined that, as her manufactures grew, there should be no decadence in the character and quality of the citizens who engaged in them. Col. Humphreys was the type of a man who has found many imitators among the wool manufacturers of New England.

The Humphreysville mill made chiefly broadcloths, which were pronounced "inferior to none which is imported." This cloth was sold at \$4.50 a yard. From President Dwight's "Travels" we get a good inventory of the machinery upon which it was made. There were in the several buildings, when he visited them in 1811, four breaker and finisher cards, two jennies, a billy with forty spindles, a picker, four fulling mills, two newly invented shearing machines, four broad looms, eight narrow looms and eighteen stocking frames. Another writer says: "The machines for abridging labor, lately introduced, are those of Molleneaux for shearing cloth, of Richards for cutting dye-woods, and one for braising and finishing cloth."

The principal part of the labor in the woollen and cotton mills was done by women and children; the former hired at from fifty cents to one dollar a week; "the latter, apprentices, who are regularly instructed in reading, writing, and arithmetic," and who apparently received no wages.

This is a fairly complete picture of the best woollen mill that existed in the United States up to the War of 1812. For its day it was far in advance of the times, and far superior to many which existed a quarter of a century later.

Another mill, clearly belonging to this period, was that started at North Andover, Mass., in 1802, by James Scholfield, a younger brother of Arthur and John, in a very humble way, for the manufacture of broadcloth. He was not over and above suc-

cessful, and in 1812 he sold the property to Pascal and Abel Abbot, of Andover, who subsequently, in 1813, sold two-thirds of the property to Isaac Osgood and Abraham Marland, who sold in turn to Samuel Ayer, of Andover, in 1818. In 1826 the property finally passed into the hands of William Sutton, of Andover, whose family has owned and managed the property ever since. In 1832, upon the death of William, it passed into the hands of his sons, William and Eben, who had been trained in the business by their father, and were among the most enterprising and successful of our wool manufacturers. The business passed ultimately under the sole management of Eben Sutton, and thence into the hands of his son of the same name, who continued in its management until his death in 1890, when a corporation was formed, the treasurer of which is William Sutton, a nephew. Thus we have a record of seventy years of continuous management by one family of a mill which ranks among the very few which may properly be called historic.

This completes the record of the New England mills which were founded before or at the turn of the century and can claim to have been in continuous existence ever since. If there are other mills belonging in the same category, I have been able to get no trace of them. The list is indeed a small one when we recall how many mills there were upon which the law of natural selection has been operative.

CHAPTER XXII.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE EFFECTS OF WAR AND EARLY TARIFFS.

IN preparing such a sketch as this, it is necessary to run back and forth, without much regard to chronological sequence, very much as the weaver's shuttle flies from one side of the loom to the other: in time we shall get a completed fabric, just as he does, although there will be "specks" and "misspicks" and "broken threads" in it, such as the weaver would not be allowed to leave, but which we must necessarily leave, because of the loss or absence of the historical materials. In gathering together these scattered threads, we have already passed in point of time far beyond the period of the American Revolution. It will be found as we proceed that the woollen manufacture has always borne an intimate relation to the history of the country, a relation peculiarly true of this industry, beyond the relationship of other industries, to national progress and prosperity. When the United States has been at war, the woollen manufacture has been called upon to clothe her soldiers, and for this reason the periods of war have always been those of its greatest prosperity. When the United States has been overtaken by financial depression and panic, the woollen manufacture has always been the first to suffer, and has always suffered more than any other. This is due to several causes, chief among them being the fact that it is the one great industry which is in the most direct competition with a foreign industry, and which is, in a sense, a transplantation from other countries. All changes in the tariff policy of the nation have therefore affected it more sharply than other industries, and it has been further influenced by the fact that it is the one great industry upon whose raw material the national government has uniformly, until recently, laid an import duty.

We have seen how the woollen manufacture can hardly be said to have had existence in New England before or during the Revolutionary War, and how, after the close

of that war, it took root slowly, in desultory fashion, and generally with disaster to those who embarked their fortunes in it. There was nothing in the prevailing conditions which gave much promise for expansion beyond the domain of the household, until the embargo of 1807 and the restriction acts that followed. When these impediments to commerce finally culminated in the War of 1812, during which all foreign trade was practically arrested, the supplying of clothing from domestic sources became an imperative necessity; and throughout this entire period of embargo, non-intercourse and war, there was no industry so prominent in the public eye as the manufacture of wool. The market was there, the demand was sharp, and the temptation was great to embark in the business without sufficient capital or knowledge of its details. The census of 1810 revealed the existence of twenty-four woollen factories, and no less than one thousand six hundred and eighty-two fulling mills, the large majority of which were located in the New England states, where most of the woollen mills were also located, although New York and Pennsylvania were already becoming prominent competitors in this industry. There were woollen mills at that time in each New England state, except Vermont, employed in making army and navy cloths, negro cloths, and blankets, which were the staple factory products of the time, the broadcloth manufacture—the only fine cloth of that period—being confined to half a dozen mills in Connecticut, Massachusetts and Rhode Island.

Some of the mills which came into existence during this period deserve special mention. Connecticut was especially prominent for the number and size of her new enterprises. The Middletown Woollen Manufacturing Company, organized by Isaac Sanford and others, was not only the largest in the country at this date, but confined itself to the manufacture of choice cloths, using only fine merino wool, and making from thirty to forty yards of broadcloth a day. It was also the first mill to employ steam-power for its mechanical work. It had a twenty-four horse-power engine, built by Oliver Evans, of Providence, the first steam-engine builder in the United States, which drove all the machinery for washing, carding, reeling, fulling and finishing. To show the difference between a big mill in those days, and one of to-day, it may be noted that single establishments with engines whose combined capacity equals over five thousand horse-power are now frequent in New England.

In the same year (1812) the Providence Woollen Manufacturing Company began the use of one of Evans' steam engines. Other woollen factories dating from this period were one at Walcottville, Conn., of which Governor Walcott was the chief owner, and two at Goshen, in the same county. E. H. Derby, of Salem, Mass., built a broadcloth mill, and imported from Lisbon a flock of eleven hundred merino sheep to supply himself with raw material. At Billingham, Mass., a woollen company was organized with a capital of \$400,000. At Pittsfield, Mass., Lewis Pomeroy erected the first cloth factory of any size in Berkshire county in this year; and this mill is one of the few which have continued in operation, except at brief intervals, ever since, under the management of the descendants of the founder. The Berkshire county people were greatly interested in the woollen manufacture, though mostly of the semi-household kind; and in 1814 the Berkshire Agricultural Society awarded a prize of \$50 to Elkanah Watson, its president, for the best piece of broadcloth exhibited. It was pronounced the finest cloth made in America up to that time, and declared to be equal to any imported.

With all these new enterprises, the demand for cloths was far ahead of the supply; and in 1813 the government was compelled to purchase from the English, with which it was at war, more than half a million dollars' worth of army cloths and blankets.

This period also witnessed the commencement of the woollen industry in the town of Uxbridge, Worcester County, Massachusetts, where it has ever since greatly flourished. Daniel Day, Joseph Day, and Jerry Wheelock, calling themselves Daniel Day & Co., built their first mill in 1810, in which they placed the first woollen carding machine and picker built in Worcester County. In 1816 the Rivulet Manufacturing Company was incorporated with John Capron, Jerry Wheelock, Thomas Farnum, and Joseph H. Perry among the incorporators—all of them names still prominent in the wool manufacture of Worcester County. Other mills were those of John Capron & Sons, built in 1820; the Luke Taft Mill, started first in 1816 and managed by his son, Moses Taft, until the latter's death in 1893, at the age of eighty-one; and the Uxbridge Woollen Manufacturing Company, started in 1825. This rural town has thus been at the front in this industry from the start of the factory system.

The Globe Mill, at Globe village, Southbridge, Mass., was originally built in 1814, and operated by the Wolcott Woollen Company, incorporated, and claimed to be the first mill to make printed dress goods or delaines. This company was re-incorporated in 1823, and its capital stock increased to \$200,000, with which a new mill was erected. Broadcloths were the principal production here until 1828, when the corporation was sold out to Sayles & Hitchcock, by whom the Hamilton Woollen Company was incorporated on January 17, 1831, with Samuel A. Hitchcock president, and William Sayles treasurer. At that time the company was operating five sets of cards and twenty-eight power looms. In 1843 and 1844 the mill was converted from a woollen into a worsted mill, and began the manufacture of mousseline delaines. In 1846 the capital stock was increased to \$1,000,000, and a cotton warp mill added to the plant. It was at this time that Joshua Ballard became the treasurer of the company, coming thence from the Amoskeag Company, which had inaugurated the mousseline delaine manufacture at Hookset, Vt., under his supervision. From the advent of Mr. Ballard the Hamilton Company has ranked as one of the most successful wool-manufacturing corporations in the country, and its genealogy, as here given, entitles it to be ranked as the oldest of these corporations now existing.

Nathaniel Stevens, the son of Jonathan Stevens, of North Andover, a farmer and currier of leather, bought a mill property in 1813, in company with Dr. Joseph Kittredge and Josiah Monroe, and began the manufacture of woollens, mostly flannels, on a small scale, but with an indomitable determination to succeed, which the war times greatly favored. It is somewhere narrated that about the year 1816, while he was peddling his flannels in Boston, he ran across Abbott Lawrence, who, after examining his goods, turned to him and said: "Young man, if you have any money to lose, I advise you to save it and quit making flannels, as we can import them much cheaper than you can make them." "As long as I can get grease to grease my wheels I shall keep on making flannels," replied Stevens; and he kept on until his death, in 1865, and his son, Moses T. Stevens, has kept on ever since, controlling to-day more sets of woollen machinery than any other individual manufacturer in the United States. This has come about not only through the gradual enlargement of the original Stevens mill, at North Andover, but by the purchase in 1855 of the Haverhill Woollen Mill, which Hon. Ezekiel Hale had originally constructed as a cotton mill in 1804, changed into a woollen mill in 1833 and sold to his son, Ezekiel J. M. Hale, in 1843; and also by the purchase by Moses T. Stevens in 1879 of the mill property of the old Marland Manufacturing Company, at Andover, established by Abraham Marland in 1807, when the whole property was renovated. In 1870 Mr.

Stevens leased the mills at Franklin, N. H., and in 1886 he purchased them. Mr. Stevens is, therefore, carrying on the business in four different mills, each of which is historic, for each was established by a pioneer in the New England textile manufacture at or before the War of 1812. In neither of these mills has the wool manufacture ever been discontinued except, perhaps, for a brief interval.

Another mill of the 1812 date was the Monson Woollen Company, which superseded the Union Manufacturing Company of earlier date, and was merged with the Brimfield Manufacturing Company of the adjoining town in 1815.

Another was the Salisbury (Massachusetts) mill, on the Powpow River, where the first contract for cloth for the American army was filled in 1812.

No stream in New England is more intimately associated with the early history of the wool manufacture than the Cochicawick River, which empties into the Merrimack at North Andover, and no section teems with memories of early ventures in this industry as does that northeast corner of Massachusetts included in Essex County. From the primitive mills of Joseph Parker and Samuel Johnson, who dammed the Cochicawick in 1671, a series of mills has come and gone there, of many of which nothing remains but the decayed timber or the grassy mounds which once retained the water. As early as 1688 we find recorded a town grant to John and Joseph Ballard of twenty acres of land, "to belong to them and their heirs so long as they shall keep up a grist mill and a fulling mill."

In 1802 James Scholfield, a younger brother of John and Arthur, who had been employed by them in their Byfield mill, removed to North Andover and purchased a mill privilege on the Cochicawick where he erected a fulling mill and entered later into the manufacture of cloth. Failing of success, he sold the property in 1812 to Abel and Paschal Abbot, and himself became superintendent of the mill two miles up the river, owned and operated by Nathaniel Stevens. A year later this property was leased to Abraham Marland; and thus comes into view one of the most remarkable men in the history of the American woollen manufacture. Born in England, and educated in English woollen mills, he came to this country in 1801, spent some time in cotton manufacturing at Andover, when he changed his mill into a woollen mill and began to manufacture satinets. Mr. Marland obtained contracts with the United States government for army flannels during the War of 1812, and made money with great rapidity. In 1820 he leased a mill property on the Shawshin river, for twenty years, purchasing the property after eight years, and building an additional mill. In 1834 this property was incorporated as the Marland Manufacturing Co., with a capital of \$60,000, the associates being Mr. Marland's two sons and his son-in-law, Benjamin H. Punchard. The mill continued the manufacture of flannels, and was prosperous beyond the dreams of the most avaricious wool manufacturer of those days, paying 25 per cent. dividends year after year. The business continued for thirty years after the death of Mr. Marland in 1849, but the ups and downs of the wool manufacture are illustrated in its gradual decadence until, in 1879, the company suspended operations, and the property was subsequently purchased by Hon. Moses T. Stevens, the third son of Nathaniel Stevens.

One difficulty prevented the wool manufacture from spreading as fast as that of cotton during this period. The scarcity of the raw material embarrassed everybody engaged in it. The sudden demand for wool resulted in a sort of craze among the farmers, which spread throughout New England. It was during this period that Hon. R. R. Livingston, the American minister to France, and Col. David Humphreys, of Connecticut, then minister to Spain, imported the first Spanish merinos that had ever been seen here, and the price which fine fleeces commanded (from one

dollar to two dollars and fifty cents a pound, while the excitement was at its height) resulted in a great increase in the local wool clip. In 1809 William Jarvis, then the United States Consul at Lisbon, Spain, had sent some three thousand merino sheep to this country; and thus were laid the foundations of a sheep industry, which, while it has declined in New England, has spread throughout the West and dominated our subsequent development in that direction. The merino craze of this period can only be likened to the furor for the mulberry tree which took possession of the New England farmer twenty-five years later. But it differed very materially from the latter, in that it had a substantial basis upon which to rest; it had behind it the necessities of the people, and it had discovered the breed of sheep which produced the fleece best adapted, as all subsequent experience has proved, for the clothing of the masses. It was accompanied by the evidences of human weakness, as, for instance, when men paid one thousand dollars and fifteen hundred dollars apiece for merino sheep, which fell in value, as soon as the war ended, far below a normal figure.*

Expensive as it was, in individual cases, it established an industry which has since been worth untold millions to the country.

The experience of the manufacturers was not very different from that of the farmers. The prices of broadcloths rose steadily throughout the eight years during which our foreign relations continued to be disturbed. The records are frequent of sales of broadcloth at \$8 and \$12 per yard, and in 1814 the prices of some makes went up to \$18 a yard. The woollen mill seemed to be a sort of gold mine. It was impossible to get machinery built as fast as it was wanted to make the fortunes of would-be manufacturers. As a matter of fact, few fortunes were made, and a good many men were ruined; for when peace was declared, in 1815, this manufacturing momentum being then at its height, the whole situation changed in the twinkling of an eye. The old tariff was restored. Commerce, which had been at a standstill, revived at once, and the importations of woollens took on unprecedented dimensions. Inflated values collapsed; there was no longer any market for American cloths, which were, in truth, very inferior at that time to those made in England; and the manufacturers found themselves face to face with a situation as distressing as had previously been that of the men of commerce, whose natural irritation over what they regarded as an unnecessary, unwarranted and fruitless national policy, had led to open declarations that New England would be better off outside the United States than she was as a part of the Union.

However, though many were ruined, others were able, or at least hopeful, of ability to stick to the manufacture of wool, and New England took the lead in an appeal to Congress for such a revision of the tariff as would make this possible. In this appeal the woollen manufacturers were joined by the cotton manufacturers, and their united efforts resulted in the passage of the tariff act of 1816. At the front of the movement were two Connecticut woollen manufacturers, Andrew W. Magill and William Young, who stated in their letter to the Ways and Means Committee that twenty-five establishments were then engaged in the manufacture of woollen cloths in Connecticut alone, employing twelve hundred persons, besides as many more hands indirectly. Their capital was \$450,000, and they probably made seventy-five thousand yards of narrow and twenty-five thousand yards of broadcloths. As many as

* "The revulsion in the industry of wool-growing was equally complete. At this time full-blooded merino sheep sold for one dollar apiece. Bucks had been sold during the war for one thousand dollars apiece. Wool did not materially rally in price for the nine succeeding years, and during that period most of the full-blood flocks of the country were broken up or adulterated in blood."—*Randall's Practical Shepherd*, page 24.

five hundred thousand yards were supposed to be made annually in families. The Rhode Island woollen manufacturers also joined in this movement.

It is worthy of mention that it was in opposition to the duty on woollens proposed in this bill, that Daniel Webster first appeared as an opponent of the doctrine of protection as applied to domestic manufactures. His attitude at that time signalizes the interesting controversy then in progress in New England, but chiefly in the seaport cities, as to the policy of the government on this question, a controversy which raged fiercely for the next ten years, and was then definitely settled by the passage of the tariff act of 1824. Boston, as we know, was a commercial city; the ships of her merchants penetrated to every ocean and port; their interests lay strongly in the direction of low duties on imports, and they opposed, with vigor and ability, the petitions of the manufacturers from the interior in behalf of a new and higher tariff.

It seems curious enough to find the names of Nathan Appleton and Abbott Lawrence among the participants of the famous Faneuil Hall meeting of 1820, called to protest against a protective tariff, and addressed by Daniel Webster in a speech which is not included in his published addresses. Eight years later, Mr. Webster, explaining his attitude at that time, and in 1824, said that, "The opinion of New England up to 1824 was founded in the conviction that on the whole it was wisest and best, both for herself and others, that manufactures should make haste slowly. She felt reluctant to trust great interests on the foundation of government patronage. But the Act of 1824 settled the policy of the country. What then was New England to do?" Mr. Lawrence, in one of his letters to Hon. W. C. Rives, of North Carolina, explained, in a few luminous sentences, the whole relationship of the Boston merchants to this question, and the whole advantage which came to them and to New England, by reason of the fact that their opposition to protection was over-borne. "Previous to the War of 1812," he wrote, "we were an agricultural and navigating people. The American system was forced upon us and was adopted for the purpose of creating a home market for the products of the soil of the south and west. We resisted the adoption of a system which we honestly believed would greatly injure our navigation, and drive us from our accustomed employments into a business we did not understand. We came into it, however, reluctantly, and soon learned that with the transfer of our capital we acquired skill and knowledge in the use of it; and that, so far from our foreign commerce being diminished, it was increased, and that our domestic tonnage and commerce were very soon more than quadrupled. The illustrations were so striking in every department of labor that those who fifteen years ago were the strongest opponents of the protective tariff among us have given up their theories, and acknowledged that the revelations are such as to satisfy the most skeptical. We have gone forward steadily till every description of manufactures are as well settled in New England as the raising of potatoes."

It is a curious fact that Boston city never showed any disposition to engage in the wool manufacture within her own limits. A list of industries pursued there about the turn of the century is very long, and includes cordage, twines, and some other semi-textiles, but nothing at all of which wool was the raw material. Nor did Boston have any interest in the sale of the woollen goods made in the surrounding country. The manufacturers of that day found their market as best they could, taking all the risks of the business, and all the profits—when there were any.

One of the most interesting chapters in the commercial history of the capital of Massachusetts relates to the gradual change in these conditions, out of which grew

up the commission-house business, which came in time to employ millions of Boston capital; which gradually brought about the most intimate relations between Boston men and the woollen manufacturers of New England, and led to the investment of millions of Boston capital in woollen manufacturing. Merchants were thus made manufacturers, often against their will, and because they became involved in the financial affairs of their manufacturing consignors. Many manufacturers who developed the highest order of talent in that field, were thus evolved out of the mercantile world. To-day the largest and most successful of our wool-manufacturing establishments are directed from Boston. The gradual steps in this evolution form an interesting chapter in local history yet to be written. It is due to the foresight and sagacity of these merchants that Boston has become almost literally the "hub" of a vast factory wheel, whose arms extend to the Connecticut and the Kennebec, and whose revolutions employ labor upon nearly every mill stream in New England.

The list of these commission merchants is long, and embraces the names of many men whose philanthropy and public spirit have made them known across the continent. It includes such men as Abbott, Amos and Samuel Lawrence, who turned from the business of importing to become projectors and managers of the largest corporations engaged in manufacturing cotton and wool; James L. Little, J. Wiley Edmands, Rufus S. Frost, E. R. Mudge, the Lowells, the Appletons and a host of others. It connects with our industrial history, in a way more intimate than the public dreams of, the names of such historic commission houses as Lawrence & Company, Parker, Wilder & Company, Joy, Langdon & Company, Rufus S. Frost and Company, Mudge, Sawyer & Company, Converse, Stanton & Cullen, Faulkner, Page & Company,* Wendell, Fay & Company, Harding, Whitman & Company, L. C. Chase & Company, and many more, including many firms which have passed away, and others which, though their founders are long since dead, live on, and live up to the traditions of the past.

It is an authenticated fact that the first store opened in Boston for the sale of American woollens on commission was that of Joshua Clapp, at the corner of Cornhill and Market streets, in the spring of 1821. Mr. Clapp was then a young man who had come from Leicester, Worcester county, and secured his business training in the great house of A. & A. Lawrence. His opening stock consisted of twelve pieces of red flannel manufactured by Abraham Marland, of Andover, about the same quantity of flannel from the mill of Nathaniel Stevens, also of Andover, a few pieces of heavy unsalable broadcloth, from the Crowninshield mill in Danvers, and a bale of American cotton cloth. The stock was replenished twice a month by the receipt of goods manufactured in the meanwhile at the factories. These were brought from Andover to Boston in a one-horse wagon, in loads consisting of from twelve to twenty pieces of flannel, carefully folded in paper wrappers and covered with tow cloth to secure the goods from injury by sun or storm. At a later date the account of the Litchfield factory of Hon. Frederick Wolcott, already alluded to, was added, and the chronicler to whom I am indebted for these details (the late Henry Emmons, who was a clerk at Mr. Clapp's store), adds that the Litchfield goods were "so unlike those of the Crowninshield mills, and so little resembled the unpopular and hitherto

*This well-known firm, founded by Thomas Tarbell, was originally an importing house. The Charles Faulkner, who became a junior partner in 1831, and the head of the new house of Faulkner, Kimball & Company, in 1850, was the younger son of Francis Faulkner, who began the manufacture of satinets at North Billerica in 1811, and took his sons James R. and Charles into partnership in 1824, when he began the manufacture of flannels. Ten years later Charles began mercantile life in Boston, as above described.

almost unknown American broadcloth, that there was no difficulty in placing on the markets of Boston and New York all the goods the factory could supply." Mr. Clapp subsequently became the manager of the Litchfield mill, running it with equal success; and he is therefore entitled to be honored, not only as the first commission merchant in domestic woollens, but as the first of the long line of Boston merchants who combined the manufacturing with the mercantile business. Gradually his interests in mill property became larger than his commission business, and he devoted most of his time to their development.

In 1829 he purchased the Saxon and Leicester factory, located in the south part of the town of Leicester, and afterwards known as the Rochdale Mills, paying \$30,000 for the property. Here he built a new mill as well as renovated the old one, and built up a factory village which was called Clappville. The village was a model of what an American factory village should be, and Mr. Clapp took the deepest interest in the personal and social welfare of his operatives. One of his enterprises was to buy up the only hotel in the town and lease it to be run as a temperance place. Like many another New England wool manufacturer, he was beloved by his employees, who knew him to be a true friend.

Mr. Clapp's practical experience taught him that the chief reason why the domestic manufacturers were suffering so keenly from foreign competition was because they lacked the skill and knowledge required to make equally satisfactory goods. He realized that there was one quick, sure way to overcome this difficulty. Mr. Clapp picked out a young man, in whom his judgment saw the right materials, and sent him to England to pick up there the exact knowledge of the details of manufacturing, which it was impossible at that time to acquire in American mills. Mr. Clapp's protégé secured employment as a common operative in a Yorkshire mill, stayed until his Yankee inquisitiveness aroused suspicion and brought discharge, then went to another mill, and still another, with the same result, until he had learned what he went to find out. Then the young man returned home; Mr. Clapp purchased a dismantled mill at Saxonville, equipped it with the latest machinery, and put the young man in charge. The mill was employed on flannels, and its product was such a marked improvement upon anything heretofore made in the United States that the enterprise was a great success from the start.

Mr. Clapp was the most prominent figure in the New England woollen manufacture during a period of transition, which determined the future trend, not only of this particular industry, but of the whole industrial development of the New England states. He realized more quickly than most of the Boston merchants that the prosperity, the development and the future of Boston were necessarily dependent upon the prosperity and the development of domestic manufactures. Mr. Clapp put himself in the forefront of the movement which finally led to legislation avowedly framed to stimulate and encourage this building up of a new New England. It required courage to take that stand at that time. We have already alluded to the famous meeting of October, 1820, in Faneuil Hall, at which Daniel Webster took the ground that "all reasonable protection had already been given to the manufacturers; that for his part he did not consider a great manufacturing population a benefit; that he believed that it would be the tendency of the protective system to make poor men more numerous and the rich less in number; and that, in the event of its permanent adoption, two generations would change the whole face of New England society." The pertinent fact in this connection was Mr. Clapp's personal influence in inducing Mr. Webster to see the matter in a different light. No single individual had more to do with that change than Mr. Clapp. He had frequent interviews with

Mr. Webster in his store, and was instrumental in laying before him a mass of facts, carefully prepared, and bearing upon the possibilities of manufacturing in New England, in which a prophetic insight appears. The lapse of two generations has, indeed, as Mr. Webster predicted, "changed the whole face of New England society;" but the change has been not at all what Mr. Webster had in mind, but wholly along the lines of Mr. Clapp's anticipations.

Mr. Clapp enforced his views with a cogent pen. In October, 1823, a meeting was held in Boston of all the woollen manufacturers of Massachusetts, which was probably the first movement in the direction of an organization in this industry. It was presided over by Hon. Jesse Putnam, and a committee of five persons was appointed, with Mr. Clapp as its chairman, to prepare a petition to Congress, asking for a revision of the tariff and an increase in the duties on woollen goods. The letter he addressed to the woollen manufacturers of the country, in behalf of this committee, is an admirable illustration of Mr. Clapp's habits of thought and methods of reasoning, and it sheds an interesting light upon the condition of wool manufacturing in New England at that time.

"The woollen manufacturers," wrote Mr. Clapp, "disclaim any pretensions to exclusive privileges, and desire only a reasonable participation in the prosperity of their fellow-citizens. They would advance claims no farther than they are in harmony with the general welfare, and tend to promote the present and future well-being of the country. The idle clamor of interested persons may continue; but the unfounded jealousies of other great interests have, it is believed, abated; and the true sentiment of the identity of the agricultural and manufacturing class generally prevails. The depressed condition of the woollen manufactories of this country at the present time is well known. Several have been compelled to suspend or change their operations; others are apprehensive of a similar fate; and all are persuaded that a moderate increase of imposts on foreign manufactures of wool would revive and sustain their establishments. . . . We concede that duties amounting to a prohibition would be unnecessary and unsafe. A sudden and unnatural increase of manufactories would ensue; a great bounty would thus be given to this branch of national industry, eventually detrimental to the recipients of it; and the demands of the country could not be immediately supplied by them. If placed upon equal footing with foreign competitors, we doubt not that the enlightened people of this country will give a preference to the fabrics of their countrymen.

"Owing to various causes, we are unable to cope with foreign nations in supplying our markets with woollen goods. Their machinery is more perfect, the wages of labor are less, and wool is more abundant and is cheaper. British cloths are selling at a profit, while American cloths yield little, if any, to the manufacturer. It is the policy and intention of foreign governments further to cripple, and, if practicable, to paralyze the manufacturing establishments of this country. Their eminent statesmen have openly and strenuously recommended making great sacrifices to attain this object. It is now contemplated in England to allow drawbacks on manufactures of foreign wool, which will be equivalent to twelve and one-half per centum on coarse fabrics.

"Raising the duties on foreign woollen goods will tend to increase the growth of wool in this country. An earlier adoption of this salutary measure would have prevented the destruction of valuable sheep.

"We contend that an increase of duties will not be injurious to the great body of the people by manufacturers exacting exorbitant prices for their goods. We believe the permanent interests of all classes of the community are promoted by such moderate gains as will ensure industry, prudence, and perseverance, and are fully convinced that the internal competition which takes place, soon does away with all monopoly, and reduces by degrees the prices to the minimum of a reasonable profit on the capital employed. The experience of this country establishes the truth of this position. Notwithstanding the tariff of 1816 imposed prohibitory duties on low cottons, they are now sold at one-half their former prices, considering the relative value of fabrics; and it is not doubted but the fostering care of government over manufactories of woollens would tend to improve their quality, while it would eventually reduce their price. Government has incurred an obligation to cherish the manufacturing interests of the country, as during the late war, when great inconvenience was experienced by want of necessary supplies of clothing for the army, strong inducements were held out to their constituents to render the nation independent of foreign countries for clothing. Extensive and numerous establishments were made, in confident expecta-

tion that they would not be suffered to languish for want of the continued protection of the government."

The change in the tariff for which the New England woollen manufacturers petitioned, under Mr. Clapp's lead, was made by the Act of May 22, 1824; but it was not made in accordance with the wishes of the manufacturers, and was far from satisfactory in its results. In 1826 meetings of the New England manufacturers were again held in Boston, and Mr. Clapp was again placed upon a committee to address Congress. His associates were Jonas B. Brown, a member of the firm of Tileston & Brown, importers of dye-stuffs, who were also largely interested in the domestic manufacture, particularly at Milbury, Mass.; James M. Robbins, for many years a manufacturer of broadcloths at the Shepherd Mills, at Northampton; Lewis Tappan, a Boston merchant and manufacturer, afterwards a member of the New York firm of Arthur Tappan & Co.; and James Wolcott, Jr., who was the proprietor of the mill at Southbridge, which became, in 1831, The Hamilton Woollen Company of the present day. This committee complained that the increase in the duty on wool in 1824 had so operated as to leave the woollen manufacturers worse off than before the change in the law; and they particularly objected to the *ad valorem* form of the woollen goods duty, which led to large under-valuations. Thus it will be seen how early in the history of the wool manufacture the two causes which have chiefly disturbed and troubled it ever since, began to be talked about among the manufacturers. "The fact of the unprecedented depression of American woollen-manufacturing establishments," continued this petition, "is undeniable; and their increased distress and probable ruin, unless ample protection is speedily extended to them by government, are clearly foreseen." This strong language certainly justifies the conclusion that the lot of the New England woollen manufacturer, at the time of which we are speaking, was not a happy one. Mr. Clapp's integrity and business foresight were such that he would not have signed such a statement unless he knew it to be true. The evidence of its truth he produced, as we shall shortly see. The agitation, of which he was the leader, had its effect in Washington. A bill for the special relief of the woollen industry passed the House of Representatives in 1827 with little opposition, but it was subsequently defeated in the Senate by the casting vote of Vice-President Calhoun.

Out of the tariff law of 1828 the woollen manufacturers got some comfort, but it was not a measure which they especially liked, then or afterwards, and was very much less favorable to them than the shipwrecked bill of 1827.

The testimony given by a number of New England woollen manufacturers before the Ways and Means Committee in 1828, presents a fairly complete picture of the woollen manufacture of that section as it existed at that time. It shows conclusively that the New England manufacturers were not rolling in the sudden riches which they were charged with having accumulated as a result of prior tariffs. Eight New England woollen manufacturers, reinforced by half a dozen others from the middle states, went before this committee, literally with their books in their hands, revealed to it all the secrets of their business, and showed profit and loss accounts which are startling. Mr. Clapp was among the number of these witnesses. He said, regarding the Litchfield factory, that he had rented it for five years in 1821 and declined to renew the lease on its expiration, because of the unprofitable state of business. The owners had then allowed him to use it free of rent rather than have it lie idle, and the hands dispersed. Nevertheless he had lost in his manufacturing, that of fine broadcloths exclusively, \$8,995 in 1826 and \$3,895 in 1827. Benjamin Poor, one of the stockholders of the Saxton and Leicester factories, in Worcester county, Mass., which

were incorporated in 1825 as one company with a capital stock of \$150,000, showed a loss to the concern in 1827 of \$26,394. James Wolcott, Jr., of the Southbridge mill already referred to, which had been incorporated in 1821 with a capital of \$126,000, manufacturing principally broadcloths, showed a loss in 1826 of \$23,095, exclusive of interest on capital, and said that the value of the stock had fallen fifty per cent. Colonel James Shepherd, of the Shepherd Company, of Northampton (then the largest woollen mill in the United States), with a capital of \$130,000, making broadcloths and cassimeres, showed a loss of about \$30,000 in two years. Hon. A. Tufts, of the Tufts Manufacturing Company, at Dudley, Mass., with a capital of \$40,000, showed a loss of \$5,000, exclusive of interest, in eighteen months. Joshua W. Pierce, of the Salmon Falls Company, at Somersworth, N. H., showed a profit in 1825 of \$6,772, and a loss in 1826 of \$7,059. Jonas B. Brown, of the Goodall Manufacturing Company, at Millbury, Mass., making broadcloths and satinets, and having a capital of \$80,000, said that the latter was "a losing business," without giving figures. Abraham Marland, of Andover, who was making flannels exclusively to the amount of 3,200 pieces annually, on a capital of \$42,000, somewhat relieved the sombre character of the picture by saying that he thought sales were improving. The manufacturers from the middle states related similar experiences. The evidence is sufficiently conclusive that wool manufacturing under the conditions that then surrounded it, was not a seductive occupation.

Mr. George William Bond, of Boston, who should have been the historian of the New England wool manufacture, and who would have been, but for the fact that his voluminous notes (collected mostly in collaboration with his friend, George Livermore, from the mouths of living witnesses) were destroyed in the great Boston fire of 1872, made record of the fact that nearly all of the woollen manufacturers of this period failed in business sooner or later. Mr. Bond was disposed to put some of the responsibility for their ill success upon their selling agents, the commission-houses. He recounts that the manufacturers had to go into the country at clip time to buy their wool, which continued to be very scarce and high-priced. "To do this," he adds, "many were obliged to mortgage their machinery and mills to their selling-agents to obtain acceptances on which they could borrow the money. Ultimately their agents were obliged to take possession under their mortgages, many of them to subsequently pass through the same experience."

There is no doubt that this was the manner in which many Boston merchants came to be so largely interested in the wool manufacture. They came into it not voluntarily, but as a matter of necessity, for their own protection. No doubt also there were instances where the commission-houses took an unfair advantage of the necessities of the manufacturer, ultimately possessing themselves of his property for a very small part of its value. The exploits of the late A. T. Stewart, of New York, at a later period in our history, are an unsavory memory to many manufacturers still living. But the rule was otherwise. Commission-houses advanced money on goods unsold, and sometimes unsalable. They tided many a distressed manufacturer over critical periods. They loaned their capital freely, and when payment became impossible, they let it remain in the concern and took their share of the risks with the manufacturer. Many of the earlier corporations among the woollen mills can be traced to financial straits which were adjusted in this fashion.

In a word, the New England wool manufacture was in an unpromising and unprofitable state, for the whole period from the close of the war, in 1816, down to about the year 1830, when it began to revive in sympathy with the general prosperity of the country. It is a familiar saying among woollen manufacturers that their busi-

ness is the first to suffer from hard times, and the last to respond to a revival of business activity. We can find abundant ground upon which to rest that belief, in the experience of the last one hundred years. Under the compromise tariff of 1832, which remained fairly protective for the first five years of its operation, the industry displayed many signs of vigor and health. Then came the financial crash of 1837, in which the mortality among New England manufacturers was frightful.

The business reverses of Mr. Clapp dated from that panic. He was a man of great daring in his business enterprises, and usually of sagacious foresight; but at that period he misjudged the situation. Buying very heavily of woollens and flannels in anticipation of a prompt recovery, their continued fall in value bankrupted him; and his mills, together with his beautiful home in Leicester, went to the auction. He never recovered from the strain of this experience, and died in 1841.

The New England wool manufacturers recovered slowly from that commercial crisis. They were forced to continue an uncertain struggle against increasing foreign competition, under badly adjusted tariff laws, and made little progress, either in the quantity of their products or the stability of their finances, until the outbreak of the Civil War, in 1861. The manufacturers of wool in those days were a small body of brave and determined men, inured to hardships and discouragements, contending with all sorts of mechanical difficulties, hampered in the choice of their raw material, of which the domestic supply never ceased to be inadequate in quantity and unsatisfactory in quality. Literature is not very tolerant of the exaltation of the virtues of men engaged in gainful enterprises, however strong they may show themselves in the struggle against adverse conditions. The glamour of adventure is lacking, and the prosaic details of manufacturing do not appeal to the imagination. Nevertheless I venture to pause at this point in my narrative long enough to say that these men, some of whom I have named, but most of whom are altogether forgotten, deserve the grateful appreciation of their countrymen for the courage and shrewdness and determination with which they kept alive a nascent industry destined to become one of the greatest sources of our future prosperity.

CHAPTER XXIII.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE MECHANICAL ADVANCE OF THE INDUSTRY.



It is necessary now to return upon our footsteps, in order to present a picture of the mechanical progress of the woollen manufacture during the years of struggle against adverse circumstances described in the last chapter. Some one has written that the chief characteristic of the Yankee race is the determination to do nothing by hand which can be done by a machine.

There is no industry which better illustrates this trait of the New Englander than the wool manufacture. At the start, it is true, they were slow in the application of new mechanisms to their industry. During all the period I have been describing, the New England woollen mills were far behind the cotton mills in all that goes to facilitate rapid, cheap and perfect production. This may account in some measure for the fact that the cotton mills were generally successful during a time when the woollen mills were as generally unfortunate. But it would be easy to exaggerate this difference between the two industries, because there were always peculiar dif-

difficulties surrounding the woollen manufacture from which the cotton manufacture of New England was exempt. Just as notably the New England woollen mills were conspicuously behind the old England mills, throughout the entire first half of this century, in mechanical equipment. This is not surprising; for the Englishmen continued to guard their machines with the most zealous secrecy. British statutes prohibiting, under severe penalties, the exportation of any textile machinery from that country continued in force, notwithstanding some modifications in 1825, and again in 1833, down to 1845. The English manufacturers kept their mills under lock and key. No enterprising Yankee, seeking information, could enter them, except by stratagem. It thus happened that the Yankees, aided by such ingenious Englishmen as Marland and the Scholfields, had to invent anew the simple machinery which was the basis of our factory system. Up to the year 1860, except in some specific directions, our woollen mills were fully a quarter of a century behind those of England in the application of labor-saving machinery. To-day the best of them are equal in every particular to the best abroad. It is not surprising under such circumstances that the manufacturers found it hard work to compete with foreign products requiring so much skill and care in their manufacture as fine woollen cloths. With the exception of a few broadcloth mills, they did not attempt it. In 1816 Secretary of the Treasury Dallas made a report to Congress, in which he divided manufactures into three classes: those of which the whole supply was furnished at home; those which, having been only recently or partially established, did not meet the full demand, but were capable of being matured to the whole extent of that demand; and, thirdly, those for which we were altogether dependent upon foreign countries for our supply. In the second class he included "woollen goods of the coarser kinds generally, and some of the finer kinds;" and in the third class he enumerated, not only the finer cottons, linen goods of all descriptions, silk goods of all descriptions, but also "woollen goods of many descriptions, worsted goods of all kinds, stuffs, camblets, blankets, carpets, and hosiery of all descriptions." The testimony of the manufacturers in 1828, to which we have already alluded, shows the kinds of goods that were being made at that time. They were broadcloths, plain cassimeres, kerseys (or army cloth), kerseymeres, flannels, satinets, negro cloths and linseys. This was not a wide range of manufacture, and left ample room for the foreigner, with his specialties.

The machinery employed then and previously was of the simplest kind. We have already seen how the power card was first introduced, and came into general use throughout the New England mills before and during the War of 1812. In this respect, as in most others, these mills were in advance of those in other parts of the country. Mr. Bishop declares that hand cards were still used exclusively in Pennsylvania as late as 1812;* and this is not difficult to believe, in view of the fact that the hand-loom was still in very general use in Philadelphia during the late war.

Long after wool was being carded by power, and woollens fulled by power, the spinning was still done upon hand jennies, carrying from thirty to fifty spindles. The work was defectively done, and the processes were lamentably behind those which prevailed in the cotton manufacture, where power-spinning, as introduced by Samuel Slater, was now almost universally in use. In England power-spinning was in general use in the wool manufacture in the latter part of the eighteenth century; and it will always remain a mystery why Slater's achievement in cotton spinning did not tempt some countryman of his over to America to teach us how to make the same

* Vol. ii., p. 180.

use of the Arkwright machinery in the spinning of wool. No spinning-jenny, run by power, is known to have existed in any American woollen mill prior to 1819, when it was first used in the Peace Dale mill of Rowland Hazard. This enterprising manufacturer was far ahead of his times; and ten years later we find, from the testimony of woollen manufacturers before Congress, that hand or household spinning was still widely prevalent.

But the majority of the manufacturers who testified in 1828 were up-to-date men, and took pride in saying that their mills were equipped with the best machinery attainable. There was agreement among them that great improvement in the quality of their products had occurred in the five years immediately preceding their testimony, through the introduction of a variety of improved machinery, including dressing machines, the broad power loom, and particularly the Goulding invention, which marked almost as great an advance in the wool manufacture as the spinning-jenny itself. Before this invention, the length of the rolls issuing from the carding machines was limited to the breadth of the card, and the ends of the rolls were spliced together by hand, with the aid of the "billy." Goulding dispensed with the billy altogether, accomplishing with four machines what had formerly required five, supplying the endless roll, or roping, and enabling the manufacturers to produce yarn from wool at much less cost, of better quality, and in greater quantities than by the old process.

The Goulding carding machine was first introduced about 1824; and at the commencement of the next decade no new sets of cards were started on the old plan of manufacturing. The improvement not only threw out all the intermediate laborers (generally children from eight to twelve years of age), but it enabled the spinner to manage an increased number of spindles. The highest number operated by one man had been one hundred and twenty, which was now frequently increased to two hundred. The old carding engines had generally a width of twenty-four to twenty-six inches, a very few being twenty-eight inches wide. The forty-inch cards began to make their appearance about this time, and the number of revolutions of the cylinder was increased from about seventy-five per minute to eighty-five and one hundred.

There can be no question of the enormous gain to the manufacturer from this invention, or of the justice of the eulogy applied to it by M. Michael Alcan, the distinguished French expert on the technology of the manufacture, who described it as "the most important advance in the wool manufacture of the nineteenth century." "It was not a step," he adds, "but a flight." The reissue of Mr. Goulding's patent, under an Act of Congress, after it had had its regular reissue, led to one of the most complicated and important lawsuits in our entire history, in which most of the wool manufacturers of that time were interested, for all of them had adopted his machine; and the long lapse of time led them to insist that all his rights had expired. The case was tried by the most eminent counsel in the land, and resulted in 1867 in the final triumph of Mr. Gould's assignee.*

The machinery for spinning wool, introduced in the Hazard Mill in 1819, was a jack containing fifty-three spindles. It is a curious fact, in view of the many advances made in other mechanical departments, that the hand-jack continued to be employed in all our woollen mills until nearly the close of the Civil War. Our manufacturers were, in this respect, twenty-five years behind the English. Auto-

* See *Agawam Woollen Company vs. Eben D. Jordan*. United States Supreme Court, 7 Wallace; *Brodix Am. and English Patent Cases*, vol. viii.

matic spinning mules were here and there imported from England; but they did not work satisfactorily, and were abandoned. The English machines were constructed for spinning uniform numbers of yarn, and ill-suited to the needs of the New England mills, compelled, as most of them were, to use a great variety of yarns to fit a variety of products. The need for a special machine, suited to American conditions, was an incentive to many inventors, several of whom, working independently, perfected self-operating mules, which were introduced about the same time. Seth D. Paul succeeded in adapting the Sharp & Robert English pattern of cotton-mule to the work of spinning wool. The Saco Water-Power Company built a pair of these mules for the Weybosset Mills, of Providence, in 1865, which were successfully operated for many years. Johnson & Bassett, of Worcester, equipped the Chase Mills at Webster, Mass., in 1868, with self-operating mules of their own invention and construction. Two years earlier Oliver and William Brothers, of Burlington, Vt., two hand-spinners employed by the Burlington Woollen Company, perfected a self-operating jack attachment which was successfully utilized both at Burlington and Dedham, Mass. There were still other machines, the date of which was practically contemporaneous. The wool manufacturers appear to have suddenly awakened to the fact that they were lagging inexcusably behind the times in the spinning of yarn, particularly in contrast with the remarkable progress that cotton-yarn spinning had for years been making.

The full mechanical development of the New England wool manufacture cannot be said to have occurred prior to the general adoption of the self-operating mule, or prior to the year 1870. Hand-work at the crucial point of the manufacture—the yarn spinning—prevailed until about that date in the great majority of the New England mills; and it kept the industry subject to the demands of the class of operatives known as the jack-spinners, who held the key to the work of the whole mill, and who used their power, in many instances, in such a way as to subject the manufacturers to an annoyance and inconvenience hard to realize, even in these days of highly organized labor unions.

The gain in productive capacity which followed the general adoption of the self-acting mule was striking. The increased production per spindle was from forty to sixty per cent., according to the grade of yarn spun, while the decrease in the cost per pound, as contrasted with the old hand jack, was fully fifty per cent. There was also a great saving in the amount of waste, and a still greater gain in the uniformity and quality of the product.

The decade between 1830 and 1840 is generally regarded as the period which marked the transition between the old and the new methods of wool manufacturing in New England. Prior to that period three single or two double cards constituted a set, with one billy and two jennies, and this was the nearly universal adjustment of a mill. The three-set carding machine, now everywhere in use, dates from about 1840. The hand-loom still maintained its ascendancy in most of the mills, although power-loom weaving, successfully introduced in the cotton manufacture at Waltham in 1814, had long since driven the hand-loom out of the cotton mill.

I am satisfied that the first use of a power-loom in an American woollen mill occurred at the Peace Dale mill, where the first power-spinning also took place, and that it antedated the introduction of the Lowell cotton loom at Waltham. In 1812 a resident of Peace Dale, Thomas R. Williams, invented a power-loom for the weaving of saddle girths and other webbings. This was, so far as known, the first successful application of power anywhere in the world to this important department of textile manufacture. In 1814 Rowland Hazard purchased four of these looms from

Mr. Williams, paying him \$300 for each machine; and from the date of their purchase they were in successful operation in the mill. They were not used for the weaving of the ordinary woollen goods. The distinction of first applying power to that class of goods is claimed by Mr. Thaddeus Clapp, an authority on the industrial history of Berkshire county, for that locality. "I have always heard," he writes, "that the first power-looms were started in Pittsfield about 1826, and were built at Williamsburgh, Mass." Bishop fixes the date of the introduction of the power-loom in Berkshire in 1825, and states that flannels woven by water-power in Massachusetts, and exhibited at the Brighton fair in November, 1824, "gave great satisfaction."

It appears, however, to be well authenticated that in 1823 the Hamilton Company at Southbridge, Mass., which at that time had a capital stock of \$2,000,000 and was the largest wool-manufacturing concern in the country, substituted power-looms for hand-looms in its weaving-room. The records of the company show that it was compelled to encounter the strenuous opposition of its weavers in this innovation.

It was not until 1828 that the power-loom was successfully applied to the weaving of broad goods, and the application of power to fancy weaving did not take place until 1840. It was the direct outcome of the cotton-loom invented by William Crompton in 1837. Mr. Crompton was an Englishman, who came from Lancashire in 1836. Securing employment in a Taunton, Mass., cotton-mill, he was one day requested to weave a certain piece of goods which the looms in use could not accomplish. He thereupon set his wits at work, and shortly invented a loom which did the work perfectly. Mr. Samuel Lawrence, then treasurer of the Middlesex Mills, had about this time possessed himself of a sample of fancy cassimere then recently first made in France on hand-looms; and he conceived the idea that Mr. Crompton's cotton-loom might be adapted to the weaving of similar goods. Mr. Crompton undertook the task; after a series of experiments which long wore the threatening aspects of failure, he finally succeeded. Thus was inaugurated a new era in the world's wool manufacture. "Not a yard of fancy wool fabrics," wrote Mr. Lawrence, "had ever been woven by power-loom in any country till done by William Crompton, at the Middlesex Mills, in 1840." Before the Committee on Patents of the House of Representatives it was affirmed in 1878 that "upon the Crompton loom, or looms based upon it, are woven every yard of fancy cloth in the world."

The first piece of cloth woven on this loom is still on exhibition at the office of the Crompton Loom Works in Worcester. It is a dark brown fancy cassimere, with light diamond spots. So immediate and so great was the success of the new loom that in the third year after its introduction the Middlesex Company declared a dividend of thirty-three per cent. Such results naturally led to the rapid use of the new loom in other mills, although it is stated that the whole amount received during the fourteen years' term of the patent on the loom was only \$14,000.

The Crompton invention was the first step in a long series of improvements in the power-loom for woollens, which have made American mechanism famous in every manufacturing nation. It is to-day conceded that American looms have no superiors.

Up to 1857 woollen looms were run at about forty-five picks per minute. In that year appeared a Crompton fancy loom, with twenty-four harness capacity, and three shuttle boxes at each end, operating at a speed of eighty-five picks per minute. This was a great stride in production, and no advance has since been so great. But other improvements of more recent date make it possible to speed looms up to ninety, ninety-five, one hundred and one hundred and twenty-five picks per minute. The various devices for facilitating production enable a larger product to be turned out

from the looms of to-day than the difference in speed alone would indicate. Some of our manufacturers estimate the gain in production as equal to one hundred per cent. in the last thirty years.

Two other New Englanders, both of them native born, shared with William Crompton and his son, George Crompton, the honor of placing this country in advance of any other nation in the development of power weaving. These were Lucius J. Knowles, of Worcester, and Erastus B. Bigelow, of Boston. Both these men were natural-born inventors, and each was the author of more than fifty patents. Mr. Knowles was an all-round genius, and his inventions cover a great variety of manufactures, the principal among them being his steam pumping-engine, his automatic boiler feeder, and his fancy loom for producing all kinds of narrow textile fabrics. During part of his life, Mr. Knowles was both a cotton and a woollen manufacturer, making woollen goods in a mill in Warren, Mass., from 1853 to 1859, when he sold out his interest. Out of his various loom inventions grew the famous open-shed Knowles loom, now manufactured by the Knowles Loom Works, of Worcester, and as well known and as widely used in Europe as it is in the United States.

Mr. Bigelow's first important invention was a power loom for weaving counterpanes, or Marseilles quilts. This was followed by a power loom for weaving coach lace; a device so novel and promising that a number of capitalists at once united with him and his brother, Horatio N. Bigelow, to build and run these looms, forming the association called the Clinton Company in the town of Clinton, Mass., of which Mr. Bigelow is known as the founder, for it owes its start and its rapid and prosperous growth to the several enterprises located there as a result of his inventive genius.

Mr. Bigelow then applied himself to the invention of a power loom for the weaving of ingrain or Kidderminster carpets, in co-operation with Mr. George W. Lyman, treasurer of the Lowell Carpet Company, which supplied the funds. This was successfully accomplished, and in working operation in 1844, and the first power-woven carpets ever made were at once produced, with the labor of one woman at a loom, with a speed equal to the capacity of four men weaving at the hand-loom.

Subsequently, Mr. Bigelow devoted himself to inventions for weaving Jacquard, Brussels and Wilton carpets, and later to a loom for weaving tapestry Brussels and tapestry velvet carpets. These three classes of carpets are essentially different in structure, and, although the looms to weave them have some devices in common, their organization and structure are very different. These several inventions of Mr. Bigelow are among the most remarkable of all devices to enable a machine to take the place of the human mind. It must automatically meet conditions which the hand-loom weaver meets by the exercise of his judgment.

The carpets woven on Mr. Bigelow's looms were pronounced by the jury of the London Exposition of 1851 "more perfectly woven than any hand-loom goods that have come under the notice of the jury."

From Mr. Bigelow's inventions we date the extraordinary development of the American carpet manufacture—a development which places it far in advance of that of any other country. For a variety of reasons, the chief seat of this industry is not in New England, but in Philadelphia, where more power-loom carpets are produced annually than are made in all European countries combined. But New England, while surpassed by Philadelphia both in the number of her carpet mills and the quantity of their product, possesses four of the largest and most successful carpet mills in the world. The oldest of these, the Hartford Carpet Company, at Thompsonville, Conn., began operations in 1828, almost simultaneously with the Lowell

Carpet Company, at Lowell; both of them being remarkable examples of the successful management of great textile corporations. The other two are the Bigelow Carpet Company, established by Mr. Bigelow in 1854 for the manufacture of Brussels and Wilton carpets with the use of his new looms; and the Roxbury Carpet Company, established in 1859 by Michael H. Simpson, for the manufacture of tapestry Brussels. Mr. Simpson held a position of peculiar eminence among the wool manufacturers of New England, and was only second to Mr. Bigelow in original genius and in his service to the industry. The principle of all the machines for burring wool, viz., striking the burr from a tooth cylinder by means of a rapidly revolving blade, was first applied to a machine in 1833 by Mr. Simpson, co-operating with Samuel Couillard, a French inventor resident in Boston. Two years later he successfully developed a wool-combing machine, which increased the productiveness of the combers then in existence fully five-fold.

It is a pleasant task to point out how intimate has been the relationship between the manufacture of wool in the New England states and the men who have invented and made the machinery for its manufacture. For whatever progress we have made we are indebted quite as much to those who have invented and built machinery, as to those who have furnished capital to build and carry on mills. No considerable number of inventors of woollen machinery have made fortunes by the practical use of their machines in the manufacture of the goods to which they applied, Mr. Bigelow and Mr. Simpson being the most conspicuous exceptions to this rule.

In closing this chapter it is proper also to record the indebtedness of the New England wool industry to the men who have equipped their mills, the manufacturers of woollen machinery. These are the men who spent their time and money in testing new inventions and determining their practical value. Frequently they take a crude idea, and by long and costly experimentation develop it to the point of great utility. The gain to the woollen manufacturer lies in the fact that the expense and risk of testing new and improved machinery, which he was compelled to bear in early days, is now taken by the machine manufacturer, who must also take the loss usually involved in the introduction of new mechanisms.

CHAPTER XXIV.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE DAYS OF LARGE MILLS AND MILL CITIES.



WE ARE now at a period of time distinguished by the introduction of the corporation in the textile manufactures of New England, an evolution which continues to impress itself upon our development. We have seen that at the start the woollen factories were many of them corporations, local enterprises so to speak, inspired by local pride, undertaken for the general benefit of the community, and established by subscriptions made in the co-operative spirit. They required more capital than individuals had to risk. As time advanced, as the business grew more stable, new mills sprang up as the result of individual enterprise, and this continued to be the predominating method of conducting it in New England for fifty years or more. In the latter half of the century, the tendency has again been away from individual ownership, or the private partnership, towards the corporation; and to-day the bulk of New England wool manufacturing is carried

on by corporations. This development has gone ahead in the cotton manufacture much faster, and we still have an abundance of woollen mills in every New England state, owned and managed by individuals, and affording evidence that the most satisfactory business results are still possible by that method.

Very cogent testimony to this effect was given by Erastus B. Bigelow, in a pamphlet on the "Depressed Condition of Manufactures in Massachusetts," which he published in 1858. In this pamphlet, Mr. Bigelow, who contributed as largely to the industrial development of Massachusetts as any man who ever lived, declared his conviction that "under the present corporate methods of bringing together capital and skill, Massachusetts can never, as a manufacturing community, attain to a high degree of productive power; that she can never maintain even a respectable position in competition with the private enterprise of her foreign rivals." This is a very sharp arraignment of the principle of corporate management; and the experience of the forty years since it was written justifies the conclusion that Mr. Bigelow was mistaken. He was writing at a time of intense business depression; the country had not then recovered from the panic of 1857, and it was not at all surprising that, as Mr. Bigelow states, "several of the great corporations of Massachusetts have been struggling for existence, and are anxiously seeking in the Boston money market for the means to keep them alive." "The confidence of the stockholders in manufacturing stocks," he adds, "which was once so strong, seems to be quite gone;" but this confidence quickly returned, and it is to-day, throughout New England, stronger than it has ever been in the history of New England. The disasters to great textile corporations, whether of cotton or of wool, have not been more numerous, in these intervening forty years, than in the case of private firms and individuals.

The grounds upon which Mr. Bigelow based his conclusion were, in a word, that the corporate form drew its capital from other sources than manufacturing, and that the manufacturing interests were thus made subject to other interests, and the business could not, in consequence, be managed with a due regard to its own requirements; that the business was conducted and controlled from commercial centres—like Boston—rather than at the mills themselves; and that unity of purpose and action can hardly be expected under the divided responsibilities of a large corporate organization.

These objections appear to be theoretically sound. As abstract propositions we can indorse them all; and yet, when we come to apply the test of actual experience, as illustrated in the great bulk of the Massachusetts textile corporations, we find that they are not borne out by the facts. The inevitable conclusion is that the men who have been charged with the management of these great corporations have been men of unusual abilities,—abilities so marked that, in spite of the difficulties Mr. Bigelow pointed out, they have made the history of these corporations one of phenomenal success.

It is true, however, that the most conspicuous examples of success in the New England wool manufacture have been achieved under private management, either by individual manufacturers, or by smaller corporations, whose stock was practically all owned by the men who directly managed the mills. There are many reasons why this should be true in the wool manufacture, and not in cotton. Comparatively few lines of woollens are staples in the sense that sheetings and print-cloths are staples. It is, therefore, a much more difficult task to successfully market the product. In woollen goods styles are constantly changing; the fickle behests of fashion must be watched not only, but anticipated. Success depends, therefore, very largely upon individual good judgment. The risks are much greater in such a business; and they

increase in proportion to the size of the enterprise. Thus it happens that many small woollen mills—small, that is, in comparison with the great cotton corporations, carefully and closely managed by their chief owners—furnish the most conspicuous examples of success in this particular line of business.

The history of the evolution of the textile corporation belongs with that of the cotton manufacture ; although it is true that the beginnings of both Lowell and Lawrence—the latter town particularly—were marked by the establishment of some of the largest New England establishments for the manufacture of wool.

Lowell was founded in 1821, and it is worthy of notice that at the spot where the original canal entered the Concord river, in what was once the town of East Chelmsford, and is now the heart of the city of Lowell, there was erected in 1813 a wooden building for the manufacture of cotton, which was sold in 1818 to Thomas Hurd, of Charlestown, who fitted it up for the manufacture of woollens. He put sixteen looms in operation, and was turning out one hundred and twenty yards of satinete a day, when the Locks and Canals Company began to convert this quiet rural settlement into a great, bustling city. Mr. Hurd's mill was destroyed by fire and rebuilt in 1826, when he constructed the Middlesex Canal in order to secure additional power. Charles Cowley declares that he was the first man in America to manufacture satinete by water-power. In 1828 Mr. Hurd, overtaken by the business reaction of that year, became bankrupt, and the property passed in 1830 into the hands of the Middlesex Company, whose charter was obtained in that year. Its original capital was \$500,000, afterwards increased to \$1,000,000, and later reduced to \$750,000. The projectors of this mill, of whom Samuel Lawrence and William W. Stone were the most active, had been importers of woollens for many years, and the idea underlying their bold undertaking was that the time had arrived when the wool manufacture could be successfully carried on here, on the broad scale that had been adopted with reference to cotton, in the building of the Boston Manufacturing Company at Waltham, and the Merrimack, the Appleton, the Boott, and the other large cotton mills, already in the full tide of prosperity at Lowell.

The Middlesex Mill is usually spoken of as the first complete woollen mill in America ; that is to say, the first in which all the processes of the industry were carried on under one management. This is not the case, as we have seen ; but it was the largest mill yet constructed in the United States, and the first, of great size, to be organized on the plan of the modern corporation. It began with the manufacture of broadcloths, cassimeres, etc. James Cook was its agent for fifteen years. He was succeeded by Nelson Palmer in 1845, by Samuel Lawrence in 1846, and in 1848 by Oliver H. Perry, who retained the agency for three years. In 1851 William T. Mann became agent, to be succeeded in 1852 by Joshua Humphrey. In 1858 James Cook was recalled, and nine months later Oliver H. Perry was again made agent. These frequent changes indicate something of the early vicissitudes of this great corporation. Mr. Crowley, the Lowell historian, writes that "the mismanagement of the Middlesex's affairs during many years was astonishing. The entire capital of the company was lost through the mistakes and irregularities of Samuel Lawrence, William W. Stone and their associates. In 1850 the company was reorganized with new managers and a new subscription of stock. Five hundred shares, of the value of \$100 each, formed the capital with which the Middlesex took its new departure."

Notwithstanding its early difficulties, the Middlesex occupies a proud position in the history of New England wool manufacture. Its development was so rapid that in 1845 we find it employing one thousand five hundred operatives, thirty-six sets of cards, seven thousand two hundred spindles, thirty-seven broadcloth

and one hundred and twenty-two cassimere looms, and converting annually a million pounds of wool into one hundred and nineteen thousand yards of broadcloth and six hundred and twenty-four thousand yards of cassimeres, the annual product having a value of \$800,000. Mr. Miles informs us, in his "*Lowell as it Was and as It Is*," that "the whole importation of cassimeres from England to the United States in 1844 was seven thousand pieces, while the Middlesex Company alone manufactured, in that year, twenty thousand pieces." In a directory of wool manufacturers published in that year, we find it stated that "notwithstanding the immense amount of goods manufactured annually, they find a ready sale for all, for the reason that the quality always proves equal to the promise. It is truly delightful to witness with what wonderful regularity every department of this extensive establishment is conducted: every operative to the appointed department,—each managed with a celerity and regularity that cannot be surpassed in this or any other country."

The only mill in the country which approximated the Middlesex in size at that time was that of W. & D. D. Farnum, at Waterford, Worcester County, Mass., on the Blackstone river,—a stream which has come to be known historically as the most important wool-manufacturing power in the United States.

By the same directory, we find that the Farnum mills, which were three in number, ran twenty-five sets of cards in 1845, employed five hundred operatives, used one million, one hundred thousand pounds of wool, and made annually sixty-two thousand and four hundred yards of broadcloths, four hundred and sixty-eight thousand yards of fancy kerseymeres, and one hundred and four thousand yards of plain kerseymeres. This is the same mill, or series of mills, which passed a little later into the hands of Bailey W. Evans, of Providence, who died in 1895, at the age of seventy-seven years, one of the veterans of the New England wool manufacture. Mr. Evans prospered greatly as the manager and controlling spirit of the firm of Evans, Seagrave & Co.; but since his death these historic mills on the Blackstone river have not been operated.

Returning to Lowell, we find domiciled there as early as 1828 the Lowell Carpet Company, one of the best examples of successful corporate mill management in our history. Commencing with a capital of \$300,000, and confining its manufacture at first to ingrain carpets, it had originally eleven stockholders, and to-day carries upon its rolls the names of nearly one thousand, the capital having been gradually increased to \$2,000,000. The Lowell mills used only hand-loom until 1843, when an agreement was made with Erastus B. Bigelow, obligating the company to furnish him with the means to perfect his inventions in power-loom weaving, at a time when other parties to whom he applied had no confidence in his ability to succeed in a field which had hitherto baffled the brightest English inventors. Fifty of Mr. Bigelow's ingrain looms were at once placed in the Lowell mills, and for some time it was the only establishment in the world where power carpet weaving was done. By 1845 the Lowell Company was making three hundred thousand yards of carpeting per year, in addition to tufted, chenille and Brussels rugs; and, a few years later, when Mr. Bigelow's power Brussels loom was completed, a new mill was added, doubling the capacity of the factory; additions have since been made from time to time, so that to-day its capacity is thirty-nine sets of cards, twenty-two combing machines, twenty-two thousand, seven hundred and fifty spindles, three hundred and twenty-nine ingrain and one hundred and eighty Brussels and Wilton looms.

Attracted by its water-power facilities, and by that law which draws industries to a common centre, Lowell became the site of several other woollen mills, not of as large dimensions as those mentioned, but conspicuous for their excellent manage-

ment and success. Among them are the Belvidere Woollen Mills, which date back to 1832, and the flannel mill near Wamesit Falls, started by W. B. Park, of Boston. In 1834 Eliphalet Barber, Walter Farnsworth and George Hill, of Boston, purchased the mill, and conducted it until 1851, extending their business by the purchase of the stone mill formerly owned by the Whitney Mills. In 1851 Charles A. Stott and Walter Farnsworth bought the mills, and carried on the business until fire destroyed one mill in 1851, and the other in 1852. In 1853 the Belvidere Company was organized, and the two large mills at Wamesit Falls and Whipple's Falls were shortly constructed, and have since been continuously and successfully operated. Other Lowell mills are those of L. W. Faulkner & Co., the Stirling Mills, of which E. D. Holden is the agent, and the two principal mills in the county for the manufacture of bunting—the United States Bunting Company, founded in 1865, largely through the instrumentality of the late General B. F. Butler, and the New England Bunting Company, incorporated in 1889.

The founding of the city of Lawrence is largely due to the sagacity of Daniel Saunders, a practical wool manufacturer, who had learned the business of cloth-dressing and wool-carding in his native town, Salem, N. H., and moved to Andover in 1817. Here Mr. Saunders entered the woollen mill of Abel and Paschel Abbot, which he ultimately leased and managed, afterwards building a new mill on a small stream flowing into the Cochickawick and meanwhile running still another mill in his native town of Salem—so that he was quite a prince among manufacturers for that day. Seeing the possibility of making another Lowell on the lower falls of the Merrimack, Mr. Saunders bought the water privileges of Peter's Falls, and subsequently interested Samuel Lawrence and Nathaniel Stevens in his ambitious enterprise. The Merrimack Water-Power Association was organized and chartered in 1845, the city laid out and the great dam constructed, and the first of the great mill corporations at Lawrence chartered by the legislature was the Bay State Mills, with a capital of \$1,000,000. It was also the first of the Lawrence mills to begin operations, work on its buildings commencing in April, 1846, and the River mill getting its machinery in operation in February, 1848.

With a rapidity probably never before equalled in such an enterprise in this country, three nine-story mill-buildings were erected, one of them, the River mill, fourteen hundred and eighty feet long, with all the smaller outlying buildings necessary to such a Goliath among factories. Seven wheels of ten hundred and twenty-five horse-power, and two engines of one thousand horse-power kept in motion the fifteen thousand spindles of the cotton department, the sixty-five sets of woollen cards, and the thousand looms which were soon turning out a product of millions of yards of dress goods, woollens and shawls. It was remarkable how quickly the products of the Bay State mills became famous, and particularly its great specialty, the "Bay State shawl," of which, within two years of its starting, it was manufacturing three hundred and fifty thousand a year. These shawls were exhibited at the first international exposition, that of 1851, and pronounced by the judges "quite remarkable for the lightness and softness of the stuff." Many of our grandmothers are wearing to-day the "Bay State shawls" which they bought back in the fifties, and which possessed the happy peculiarity of never wearing out.

The first treasurer and general manager of the Bay State was Samuel Lawrence, of whose relations to the Middlesex Company we are already familiar. It was while he was still associated with that enterprise that Mr. Lawrence conceived and carried out this new project still more daring and extensive. Mr. Lawrence was the brother of Amos and Abbott Lawrence, and if he lacked the business training

and sagacity of his brothers, he possessed extraordinary executive abilities, unbounded confidence in himself, and a daring spirit which distinguished him, even among the daring men who were evolved out of the commercial life of Boston at this period. He planned to create the largest wool-manufacturing establishment, not in the United States alone, but in the world. He executed his plans with marvellous energy. The enterprise was too top-heavy to be carried by the men who handled it in the times upon which they had fallen. The Bay State's first resident agent, Mr. M. D. Ross, was shortly succeeded by Captain Oliver H. Perry, who came from the Middlesex, who was followed by Captain Gustavus V. Fox, subsequently Assistant Secretary of the Navy during the war. These were both able men, and under their regime the Bay State produced a number of fabrics new in domestic manufacture, which spread its fame,—notable among them being the blue flannel coating, indigo and wool-dyed, with a three-leaved twill, sheared and finished like cloth, but with all the flexibility of the flannel texture.

In the panicky times of 1857, when woollen mills went down all over the country like bricks in a row, the Bay State was one of the first to succumb. The great property stood idle for two years; finally, those whose property was rusting away succeeded in effecting a reorganization, and the entire property passed into the hands of a new corporation, called the Washington Mills Company, which had been chartered in 1858, with a capital of \$1,650,000. The first treasurer of the reorganized and rechristened company was Joseph M. Fay, who held it until 1862, when he was elected president, and Joshua Stetson became treasurer, serving until 1868, when he was succeeded by Henry F. Coe. The managing director during a portion of this period was Hon. E. R. Mudge, the head of the famous commission house of Mudge, Sawyer & Co., now Sawyer, Manning & Co., and one of the United States Commissioners to the Paris Exposition of 1867, in which capacity he made a notably able report upon the exhibits of woollen goods. Mr. Mudge was an astute merchant and an able and progressive manufacturer. He gave evidence of the latter fact by his introduction of the manufacture of worsted coatings in the United States, some account of which is given later on in these pages. While he lived he kept the Washington Mills in operation at their full capacity, producing goods valued above three million dollars annually; but it was always a task which overstrained the energies of those responsible for its management, the number of whom included at intervals, G. V. Fox, Edwin D. Thayer, William H. Salisbury, Parker C. Kirk and John H. Needam,—all of them men honorably known in the wool manufacture.

As time passed, the capital of the company was again exhausted; and finally, after a period of idleness, the whole plant was transferred to a new Washington Mills Company, in 1886, of which Frederick Ayer, of Lowell, was the leading spirit. The new management realized that the wool manufacture had made great strides in the thirty-five years since the original buildings were constructed, and that such a huge establishment could only be carried on successfully by an equipment of the most modern and perfect character, permitting the enormous product to be made at the lowest possible cost. It dealt with the situation heroically. All the old mills were pulled down, one after another, and new and splendid structures rose in their places, in which were set up the latest and most improved appliances for the carding, combing, spinning and weaving of wool. At the end of this renovation, the Washington Mills were pronounced the most perfect wool factory in the world; and under the management of William M. Wood, as treasurer, and Edwin P. Chapin, as resident agent, it is now justifying the sagacity of those whose courage was not dismayed by the experiences we have been reciting.

The history of the Middlesex, the Bay State, and the Washington has been much quoted, as evidence of the mistake of attempting the manufacture of wool on too large a scale in this country. On the other hand, this establishment stands side by side in Lawrence with another corporation—the Pacific Mills—which is just as frequently cited as evidence to the contrary.

The Pacific Mills was incorporated in 1853, with a capital, at the start, of \$2,000,000, and its first president and leading spirit was Abbott Lawrence, the brother of the founder of the Middlesex and the Bay State. Associated with him were a number of the Boston merchant capitalists who had been prominent in the upbuilding of the great cotton mills in Lowell and Lawrence. Jeremiah D. Young was the first treasurer. The plans contemplated a plant for the manufacture of ladies' dress goods from wool wholly, from cotton wholly, and from wool and cotton combined, so that they included an aggregation of cotton mills, woollen mills and printing works—the most ambitious plans in the way of manufacturing which had yet been undertaken, even in that day of ambitious textile enterprises. The construction and equipment of the mills had not yet been completed, before the corporation found itself with capital exhausted and on the brink of failure. In this emergency Mr. Lawrence advanced, from his private fortune, several hundred thousand dollars to enable the company to begin and continue operations. Mr. Lawrence gave this evidence of his faith in the enterprise at a time when the stock of the company, having a par value of \$1000, was selling for less than \$100. His faith would have played him false, in the judgment of all those conversant with the situation during the next few years, but for the indomitable energy and sagacity of J. Wiley Edmands, who was induced by Mr. Lawrence to take the treasurership in 1855. Mr. Edmands had been brought up in the commission house of A. & A. Lawrence, who were the selling agents of the Pacific Mills, and Mr. Lawrence knew his man. Mr. Edmands bears to-day the reputation of having no peer among New England business men; and this judgment is largely based upon his achievements in setting the Pacific Mills upon its feet, and carrying it safely through the troublesome days that followed his acceptance of the responsibility, when so many concerns, hitherto financially sound, followed each other to the wall. When the panic of 1857 came on, the company was compelled to ask a six months' extension, and received the assent of every creditor. The next year the stockholders were called upon to furnish \$500,000 additional capital, and within a year later the stock of the company was selling above par. It was not until the outbreak of the war that the mills began to make money; but as that struggle went on, and the higher tariffs on goods created a demand for domestic products, it made money with great rapidity. During these years its product increased rapidly, rising from about eleven million yards of dress goods, in 1861, to forty-five million, in 1865; and since that date the total product—the sales including cloths purchased for printing—have been in the neighborhood of one hundred million yards per annum, or an average of about four yards per annum for all the women and girls in the United States.

Mr. Edmands remained at the helm of the Pacific Mills until his death, in 1877, and the development of the great establishment was steady and continuous. Speaking of this achievement, a local authority said at the time of his death that "it is difficult to form an adequate conception of the financial and manufacturing skill which enabled Mr. Edmands to bring an establishment of this size from seemingly hopeless bankruptcy to its present position of unequalled success; which kept in discipline an industrial army of four thousand persons, and made personally on his own responsibility the thousands of bargains involved in purchasing the \$7,000,000 or \$8,000,000 worth of raw material for the annual supply of the mills."

While recognizing the master mind in this great enterprise, it must not be forgotten that Mr. Edmands had around him the ablest of assistants, chief among whom were William C. Chapin, the agent, and James L. Little, the selling agent, who determined the character of the goods manufactured, and supplemented mercantile capacity with creative taste of a high artistic order. The pattern books of the Pacific Mills, now deposited in the Boston Public Library, are a revelation to those who imagine that manufacturing is a mere mechanical process of turning raw material into woven fabrics.

Mr. Edmands was succeeded at his death by Henry Saltonstall, who remained treasurer until his death, in 1894, when George S. Silsbee became treasurer of the mills.

At the other side of Lawrence from the great mills we have been describing, and which sprang up, almost like Jonah's gourd, in a night, is another great mill, the Arlington, which illustrates another kind of growth. This mill is located upon the Spicket river, a narrow stream which, rising in New Hampshire, meets the Merrimack nearly opposite the mouth of the Shawsheen in Andover. Here, on the line between Lawrence and Methuen, was located the piano-case factory of Abiel Stevens, which was purchased by Robert M. Bailey, another Boston commission merchant, and transferred to the Arlington Woollen Mills, incorporated in 1865 with a capital stock of \$200,000, which began the manufacture of fancy skirting fabrics and woollen felted fabrics. Fire destroyed the plant in 1866, but the mill was rebuilt, the capital stock increased, and the manufacture of women's worsted and cotton-warp dress goods undertaken. Twice the corporation was re-organized before it began to be prosperous. In 1867 Mr. William Whitman was elected treasurer, but the financial condition of the corporation was so unsatisfactory that he resigned in 1869, only to be re-elected at the end of the same year, as the outcome of a determined effort to rehabilitate and extend the property. Mr. Whitman has remained the manager of the Arlington ever since—a longer term of service than that of any other New England mill treasurer. He has witnessed an expansion of the corporation, under his supervision, which probably has no parallel in the United States. Mill after mill has been added to the original establishment, until now a dozen or more structures, with a floor area of nearly thirty acres, present a scene of mechanical activity which is a monument to the genius of the guiding mind which directs it. The Arlington now uses every year as much wool as passes through the machinery of any other establishment, easily consuming ten million pounds, which is half the clip of the largest wool-growing state in the Union. This enormous mass of raw material passes from machine to machine, until it emerges from the finishing-rooms in the form of the most delicate and beautiful fabrics which human ingenuity can devise for the adornment of womankind.

The Arlington has performed a service for the development of the American worsted manufacture which gives it a unique position in the history of the industry. With a spinning capacity far beyond the requirements of its own two thousand looms, it makes worsted yarns for sale; and the opportunity is thus afforded for manufacturers of limited capital to build up new enterprises without the expense of constructing spinning plants, which are the most costly parts of a complete mill. Thus the Arlington, like a number of smaller establishments in other parts of New England and the Middle states, has been an important agency in making possible that specialization in the wool manufacture which distinguishes it in England and on the Continent, and to which we have alluded as constituting the chief difference between the industry there and here. At the present time the Arlington

is engaged in a new extension of its business, the building of a worsted top-mill, which will still further extend this specialization of the industry, by enabling small spinners to obtain their partially prepared raw material, without the expense of constructing mills for the carding and combing of the wool.

Lawrence and Lowell are respectively the third and fourth largest wool manufacturing cities in the Union, as measured by the value of their product in 1890. Philadelphia stands at the head of the list, with a product worth \$73,713,000; far behind it comes Providence, Rhode Island, with a product of \$18,237,000; then Lawrence with \$10,431,000; then Lowell with \$7,037,000, and no other American city approaches within many millions of this latter mark. Until the census of 1890, Lawrence stood second in the list. Her actual production largely increased during the last decade, but that of Providence increased much faster, largely owing to the phenomenal growth of the great worsted mills of Charles Fletcher, the president and general manager of the National and Providence Worsted Mills. The rapid rise of Providence into prominence as a centre of the worsted manufacture, is as notable as the similar development of New Bedford in the cotton industry. Mr. Robert Bleakie, of the Hyde Park Woollen Company, one of the largest, most sagacious and most successful of the present-day New England wool manufacturers, narrates that when he first came to this country from Scotland, and went to work as an overseer in Providence in 1847, the mill in which he was employed was the only woollen mill then in operation in that city. This was the Elm Street Manufacturing Company, running three sets of cards, and was a small concern. In 1861, after a long sojourn in New Jersey, Mr. Bleakie returned to Providence to co-operate with William C. Chapin in the construction of the Riverside as a ten-set woollen mill; and the development of the industry in Providence dates from that time. The Riverside was followed in 1864 by the Wanskuck, which was organized with a capital of \$500,000, and thirty sets of cards, and at once made its impress upon the market with its production of fine overcoatings, beavers, kerseys, elysians, and ladies' cloakings. Under the skillful management of Jesse Metcalf, its founder and agent, and his associates, the Wanskuck has developed gradually into a worsted mill, of an equipment exceeded by very few in the country. Another Providence mill, dating from the same year, is the Weybosset, owned by Taft, Weeden & Co., and equally famous for the excellent character of its products in worsted suitings, etc. This firm is an outgrowth from Bradford & Taft, who leased Farnum's old No. 3 mill at Waterford, Massachusetts, in 1852, for the manufacture of fancy cassimeres. The business was continued by Bradford, Taft & Co., in 1856, and they leased the Central mill at Uxbridge in 1859. The firm of Taft, Weeden & Co., formed in 1864, discontinued the Waterford business in 1866 and the Uxbridge business in 1868, leasing the new mill of Edward Harris at Pawtucket, until 1864, when they bought of R. & J. Peckham a stone mill, built by John Waterman in 1836, in the westerly part of Providence, and here they have remained and enlarged. The reputation of the Weybosset was largely gained by the fact that it was one of the earliest of the American mills to discard the habit of copying foreign patterns in its fancy cassimeres, and substituting American designs characteristic of the taste and needs of our own country.

The Atlantic, one of the largest and most successful dress-goods mills of New England, was organized in 1879; Charles Fletcher's mills about the same time; the Geneva Worsted Mills of Morris I. Ullman in 1880; the Lymanville Company in 1884, and others at a still later date; so that the whole of the great worsted industry of Providence is of comparatively recent date. Yet the city more nearly resembles to-day, in the characteristics of its chief industry, the city of Bradford, England,

the great centre of the Yorkshire worsted manufacture, than any other American town. Like Bradford, Providence is the centre of a number of outlying towns of no mean proportions, in which the woollen and worsted industries have latterly attained a remarkable development. Chief among these towns are Pawtucket and Woonsocket, the latter the location of the famous mills of Edward Harris, who justly ranks as one of the most prominent and successful wool manufacturers New England has ever produced. Born in Smithfield, R. I., in 1801, Mr. Harris began life as a school-teacher, and afterwards became a clerk for his uncle, William Harris, a prominent cotton manufacturer at Valley Falls. He saved his earnings, and in 1831 purchased a small one-set satinet mill in Woonsocket, which he operated in partnership with Edward Seagrave. Mr. Harris built additional mills in 1836, 1837, 1844, and 1846 until he had become the manager of twenty-five sets of machinery, one of the largest mills of that period. In 1866 he began the construction of another group of mills, in which were also located twenty-five sets of machinery. In 1837 Mr. Harris began the manufacture of what was known as "merino cassimeres," made with cotton warps and wool fillings. In 1842 he superseded these goods with an all-wool fancy cassimere, which soon came to be known as the "Harris cassimere," and secured a reputation for excellence as wide as the nation itself. Mr. Harris was prominent in politics, and even more prominent as a philanthropist and public benefactor. In this respect he resembled a great many other New England wool manufacturers. No body of men, engaged in any special line of business, has done so much, in proportion to their numbers, to foster schools, to build churches, to found libraries, and to promote the good works which make our New England life beautiful.

We have alluded above to the chief cities in New England in which the wool manufacture has shown a tendency to concentrate. Other towns of smaller size in which it is the predominating industry are Pittsfield and Holyoke, in Massachusetts, and Rockville, Connecticut. The latter city, the youngest, perhaps, of the New England municipalities, is a very striking illustration of early concentration of enterprise upon a single industry, followed by uninterrupted success, with the developing tendency to work into the large corporation. The mill privilege on the Hockanum river, now owned by the Hockanum Company, was first purchased July 22, 1814, for the manufacture of woollen goods, the fabrics first made here being satinets. The present Hockanum Company was first organized May 31, 1836, Alonzo Bailey being its agent, treasurer and president successively for nineteen years. Mr. Bailey disposed of his interest in 1858 to George Maxwell, who held the offices of agent, treasurer and president until his death in 1891, when he was succeeded as president by George Sykes. Near by is the extensive and perfect plant of the Rock Manufacturing Company, which was first established in 1821, and has been in continuous operation ever since,—for the last twenty years under the wise direction of Mr. H. L. James, as treasurer.

These running allusions to the larger woollen mills of New England would be altogether inadequate for historical purposes, if they contained no allusion to numerous other establishments which have achieved conspicuous success. Among them may be named the Sawyer Woollen Mills, of Dover, N. H., located on the three lower falls of the Bellamy river, all of the water-power of which is owned and controlled by the corporation. The mills have all been rebuilt and enlarged during the past twenty years, and are operated by steam and water-power, and equipped with the best machinery and appliances known in the business for the manufacture of fine woollen and worsted goods. The business was commenced by Alfred I. Sawyer, in 1823, who for a few years carried on the custom business, carding wool and dressing

cloth. In 1832 he commenced to manufacture wool flannels, which was carried on until 1859-60, when the machinery was changed for the manufacture of cassimeres and other cloths for men's wear. After his death, which occurred in 1849, the business was carried on by his brothers, Francis A. and Jonathan Sawyer, under the firm-name of F. A. & J. Sawyer. In 1873 the mills were incorporated under the name of the Sawyer Woollen Mills, the old firm of F. A. & J. Sawyer continuing as selling agents of the corporation. The business, which employed about sixty hands in 1860, now employs over six hundred hands. The goods manufactured by these mills have a high reputation. Another equally famous mill is the Assabet, located at Maynard, Mass., and operated by Lorenzo Maynard, as agent. The Assabet was founded in 1862; and favored by the business conditions which then prevailed and the sagacious management which has always distinguished it, the establishment grew rapidly, until it reached a machinery capacity of sixty-seven sets of cards, making it the largest woollen mill, as distinguished from a worsted mill, in the United States, and one of the largest, if not the largest, in the world. The woollen mills of New England have, as a rule, remained under individual management, and of comparatively small dimensions, as contrasted with the worsted mills, which are generally corporations, and apt to be large ones. It is popularly supposed that in the woollen manufacture proper, the best results are reached in smaller mills, permitting closer supervision. While this is undoubtedly the fact, as a general rule, the Assabet corporation is a striking evidence that equal success may also attend the larger woollen mill, given the proper business management.

Another illustration of the fact, no less striking, is the Burlington Woollen Company, located at Winooski Falls, Vt., the only large woollen mill in that state which ranks among the historic New England mills. The factory was established in 1821, and the company was incorporated in 1861, and now has Joseph Sawyer, of Boston, as its president, and Thomas F. Pattison, of New York, as treasurer. F. C. Kennedy has been the agent of the Burlington for many years, and his gifts as a manufacturer are recognized and admired throughout New England. This great mill runs twenty-five sets of cards and one hundred and sixty-five broad looms, and its beavers, broadcloths, doeskins, cloakings and fine fancy cassimeres have justified the claim that New England can produce woollen goods of as high a grade as are made anywhere.

Other woollen mills of the same class and character, although not quite so large, are: the Worumbo, located at Lisbon Falls, in Maine, with twenty-one sets of cards, of which Galen C. Moses is the treasurer, and which dates its origin from the Civil War; the Talbot Mills, at North Billerica, Mass., founded by the late Governor Thomas Talbot, of which Frederick S. Clark is now the treasurer, with twenty sets of cards, making fine all-wool flannel dress goods; the Broad Brook Company, at Broad Brook, Conn., dating from 1848, of which Charles M. Beach is the treasurer, and which operates eighteen sets of cards, making fine worsted suitings chiefly; and the Gilbert Manufacturing Company, located at Ware, Mass. This latter mill was founded in 1841, by the late Charles A. Stevens, a son of Nathaniel Stevens, of North Andover, to whom reference has already been made in conjunction with George H. Gilbert, under the firm-name of Gilbert & Stevens, succeeding the Hampshire Manufacturing Company, one of the oldest establishments in the state. They were especially successful in the manufacture of fine flannels, and the merits of their goods early won for them a world-wide reputation. In 1846 they built the fine granite mill in which the Gilbert Manufacturing Company is now located. The partnership was dissolved in 1851, Mr. Stevens retaining the original mill buildings,

which he several times enlarged, and forming a partnership with his son, Hon. Charles E. Stevens, who has carried on the business since the death of his father in 1893. The Gilbert Manufacturing Company continues to be conducted by the heirs of George H. Gilbert.

Still another historic mill is that of the S. Blackington Woollen Company, located at Blackington, Mass., which was established in 1821 by Sanford Blackington, and has been continued from that time to the present by Mr. Blackington and his heirs, Mr. O. A. Archer being the present manager. The corporation was formed in 1876, and the mill runs nineteen sets of cards, mostly employed upon fancy cassimeres and worsted suitings. We cite the above in addition to mills already named, as typical New England woollen mills, long established and prosperous, in most instances under the management of succeeding generations of the same family. They do not by any means exhaust the category of such mills; but they serve to illustrate how the woollen manufacture has taken root and continued to grow in each of the New England states.

The projectors of the great mill cities we have described wrought a change in the industrial aspect of New England, the influence of which is increasingly seen and felt in the evolution of New England civilization. They substituted the big city for the little village, as the seat of manufacturing enterprise. They realized in the fullest degree the moral responsibilities which attached to their great financial undertakings. From the start they recognized the need of the most zealous watchfulness over the moral purity of each separate community of laborers brought together by their agency. They were men whose Christian benevolence and foresight transcended even their financial skill and industrial enterprise. Never was there devised a more thorough system of mental culture, moral guardianship and religious influence than in connection with the earliest manufactories in Waltham and Lowell. At the former place, under the patronage of the manufacturing company, the modern system of popular lectures had its birth, and the Rumford Institute of Waltham was the first lyceum on this continent. Wherever the control of similar corporations has passed into the hands of these same capitalists, their associates or successors, a similar liberality has been exercised; and numerous have been the instances, during years in which the machinery has been run at a loss, when generous contributions have been made from the treasury for the increase of libraries, the maintenance of lectures, the erection of churches, and the support of religious teachers. The evidence is conclusive that this moral supervision exercised over the lives of their employees was not purely perfunctory. The boarding-houses built by the mills at Lowell and Lawrence, for the accommodation of the help which come to these cities from the rural communities, were carefully guarded, under matrons trusted by the proprietors; persons of doubtful character and bad habits were denied admission there, and were discharged from the mills upon the evidence that their influence was bad. Mr. Miles, in the volume already referred to, has given conclusive evidence of the watchfulness of the corporations in all these respects; and Mrs. Harriet H. Robinson, in her interesting sketch of the early operative life in Lowell, makes the most satisfactory demonstration of the healthy, cheery and wholesome surroundings of the girls who operated in these mills.

The most elaborate system adopted by any of the Lowell or Lawrence mills, or by any mills in this country, and probably in the world, for the benefit of their employees, was that of the Pacific Mills, which received a gold medal awarded by the Paris Exposition of 1867 for the best illustration of an establishment which "by special organization, or by special institutions, has developed a spirit of harmony

among all those co-operating in the same work, and has provided for the material, moral and intellectual well-being of the workmen." The presentation under which the Pacific Mills won this prize showed that in the construction of dwelling-houses for the occupation of the operatives, pains had been taken to supply cheerful and attractive homes, with every convenience for health and comfort, at a moderate rent, equal to about one-eighth of their weekly wages. The boarding-houses were arranged with equal care for health and comfort, and furnished rooms for two occupants rented for about one-third of the average wages of the female operative, including food, lights and washing, fuel being extra. Only women were allowed in the boarding-houses built for that sex. An association called the "Pacific Mills Relief Society," of which every employee of the mills must be a member, contributing from two to six cents per week, undertook to provide, from the funds thus accumulated, for the sick and disabled. These funds were under the management of the treasurer of the corporation, which contributed generously to increase them; but otherwise the organization was controlled by the operatives. During the first twelve years of the existence of this society \$25,530 were paid out to one thousand eight hundred and sixty-eight sick members. Another organization was a circulating library, for which the corporation furnished a room and started with a fund of \$1000, and to which every employee was required to pay one cent weekly. Like the relief association, this was entirely under the management of the employees. At the time of its abandonment it had accumulated over eight thousand volumes. The corporation also established a hospital for the sick, and sustained an evening school for the children of the operatives, and was a generous giver to the various churches. It reported to the Paris Exposition that these organizations had tended to prevent strikes, to encourage savings, to promote good habits, and to secure a higher grade of workmen.

Gradually one after another of these paternal features of the Pacific Mills have disappeared. The public library of the city absorbed and superseded the mill library; the various organizations of the operatives undermined their interest in the relief society; and as the city of Lawrence grew larger and the character of the help gradually changed, the proportion of native born steadily decreasing, where at the start it had included nine-tenths of the whole thirty-six hundred, the relations between the corporation and its employees underwent that modification, hardly perceptible at first, which has ended, here as in other mills, in the entire abandonment of any attempt to exercise any supervision over any part of their lives, except such as is actually passed inside the mill during the fifty-eight hours per week which the law now allows the mill to run.

Herein we touch the chief points of difference between the old and the new factory life. It is a difference for which the factory itself is not primarily responsible. It is due to the transition from native American help, such as manned all our early mills, to foreign-born help, which comes to the work with its own customs, and is largely beyond the reach of the influences with which the projectors of Lowell and Lawrence sought to surround the home life of their operatives. It may be said that it is the upbuilding of these large factory towns which has wrought this change in the character of our mill help. The answer is that the foreign-born population did not begin to play an appreciable part in manufacturing until the supply of native help fell below the demand. In the old days it used to be looked upon as quite the thing for the daughters of the New England farmers to pass two or three years in a factory, earning their two or three dollars a week over and above their board, which made a very comfortable addition to the scant family income. To-day the farmer's daughter will not go into the factory. If she has her living to earn, there are ways

whereby she can command a larger wage, under conditions not so laborious or so trying. Once she began to disappear from the mill town, she went very fast; for the help that superseded her tended to accelerate her going. It was help of a distinctly lower order, because it came from lands where the conditions were lower. The first supplies of non-American help were largely Irish, mixed with many English, immigrants from the textile centres of the old country. Soon after the close of the war, the French Canadians began to be conspicuous in both woollen and cotton mills. They proved to be excellent operatives, skillful with the machinery, attentive to their duties and contented with their earnings. The influx of French Canadians has been so great that we now have mill towns in which they fairly divide the population, like Woonsocket in Rhode Island, and Holyoke in Massachusetts. On the streets of one of these cities, of a summer night when everybody is abroad, one might easily imagine that he had suddenly been transplanted to a manufacturing town in France. Of late years there has come to be a considerable mixture of operatives from the southern European countries, the truth being that the mills take their help wherever they can get it, and in prosperous times it is not always easy to get enough to man the machinery.

Upon a miscellaneous population of this character, with no kinship of race and no common interest except that which a common occupation supplies, it is useless for the mill authorities to attempt to exercise the influences which prompted the Pacific Mills to organize the Relief Society and the Reading-room. But the work they used to do in these directions, the public now does, within narrower limits, it is true, but with perceptible results. The public school is helping to assimilate these masses of heterogeneous peoples, and a thousand influences are at work to mould them, and the new generations of them, into the stature of American citizenship.

A half century has wrought a remarkable change in the New England mill town; many good people, looking back to the days of the "Lowell Offering" and the quiet boarding-houses where the operatives were surrounded by all the safeguards of home, shake their heads and declare that manufacturing has been the ruin of New England. It has certainly changed New England; but if it has brought to those who now work in the mills opportunities for a livelihood better than could otherwise have been theirs, it can hardly be claimed that manufacturing has worked any degeneration in the New England population. It has drawn into our midst elements which are unfamiliar with our traditions and alien in many ways. But it has drawn them here to their own advantage; and if their coming proves a gain to them, it must be a gain to New England also.

The contrast between these great mill towns and the New England manufacturing village is very marked, and constantly impresses itself upon one whose business it is to study the development of the wool manufacture. The woollen mill, as we have seen, has been the nucleus of more thriving villages in the New England states than any other industry,—one might almost say than all other industries combined. In these villages there has existed, from the start, a relationship between the manufacturers and the employees which cannot exist where the operatives are numbered by the thousand, and are constantly coming and going, as is the case in the larger mill towns. This relationship is sometimes almost patriarchal in its nature, even in these days. We have already illustrated this relationship by citing the case of Humphreysville, Connecticut, the first industrial village on the Naugatuck river, founded by Col. David Humphreys in 1804.

That was about the time when the English public was stirred to its depths by revelations of the cruelties and abuses which had fastened themselves upon the Eng-

lish factory system, particularly in connection with the employment of children. Rumors of these dreadful things found their way to America, and Colonel Humphreys found his neighbors very reluctant to allow their sons and daughters to go to work in factories, fearing that vice and disease and cruelty were inherent in the factory system. His methods soon allayed these apprehensions. What happened at Humphreysville, happened in more or less degree, under varying circumstances, in scores of New England villages. Everywhere the manufacturer sought to make his factories worthy of the self-respecting labor which they had created. Such villages as Peace Dale, in Rhode Island; Ballardvale, Billerica, Uxbridge and Webster, in Massachusetts; Rockville and Stafford, in Connecticut, are types of communities where the original manufacturer stood to his operatives in the relation of friend and adviser, and felt a real responsibility for the well-being of his people. They went to him with their troubles, and they stuck by him in his reverses. In these villages many instances occur where one generation after another has worked in the mill, just as one generation after another of the same family has owned and managed it. Into all these villages, as into the mill towns, the foreign element has penetrated; otherwise it would have been impossible to keep the mill force recruited. But the feature which distinguishes most of them, from the mill towns, is the permanency of their population. Once settled in such a locality the thrifty family becomes rooted, and from this class of operatives have sprung many of the men who make New England what it is to-day. The sons grow up in the mills; they become overseers; they develop into superintendents; they are called to posts of responsibility in other establishments; often they become manufacturers on their own account, and always they carry about with them the impress of an early training that was in many ways admirable.

In all that goes to promote the material welfare of the operative, there has been a remarkable gain to the operative in the New England woollen mill. The chief of these gains, in importance, is probably the shortening of the hours of labor. At the opening of the century fourteen hours a day were the universal rule in all woollen mills. These hours continued in most mills down to the middle of the century. Mrs. Robinson writes that the hours at Lowell in the early days of the cotton industry were from five o'clock in the morning until seven in the evening, with one-half hour each for breakfast and dinner.

Mr. Joseph M. Wade, in speaking of the late Bailey W. Evans, says that from 1851 he worked for him many years, "from half-past four in the morning until a quarter of eight at night for sixty-four cents a day, with ten-cent whale oil lamps for light, and I never was happier." These hours were taken as a matter of course in those days, barbarous as they now seem. Legislation has now reduced the hours of labor in textile mills to fifty-eight in Massachusetts and sixty in each of the other New England states; it was not necessary, however, to wait for legislative compulsion to begin this reform. About 1850 twelve hours a day began to be a very general rule in Massachusetts mills, it being customary, in the winter months, to work until nine o'clock in the evening, with half an hour each for breakfast, dinner and supper. About 1855-60 eleven and eleven and one-half hours began to be the general day's work, and this continued until about 1880, except in Massachusetts, where the ten-hour law went into effect in 1866.

With shorter hours has come a great improvement in the mill surroundings of the operative classes. There is a vast contrast between the conditions of labor in the old-fashioned New England mill, rudely constructed, badly lighted, altogether unventilated, heated by iron stoves, with no conveniences of any description, with

ramshackle machinery that would have tried the patience of Job, and a modern mill, steam heated and electric lighted, airy, roomy, clean, with its perfect machinery working automatically, with hardly any demand at any point upon the physical strength.

CHAPTER XXV.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE DEVELOPMENT OF THE WORSTED MANUFACTURE.

THUS far attention has been confined to the woollen manufacture, as distinguished from that branch of the industry known as the worsted manufacture. In a sketch of this character it will not be expected that we shall go into minute details, to indicate the difference between these two processes of manipulating the wool fibre. It is enough to say that in manufacturing by the woollen process the fibre is carded, and then, by means of a mule, spun into a woollen yarn, which is a mass of tangled fibres, interlocked and interlacing with no regularity, loosely associated together and lacking in tensile strength. In manufacturing by the worsted process, the wool is combed, a process which rejects the shorts fibres, called the "noils," and lays the remainder parallel with each other. These parallel fibres are further drawn, spun and closely twisted into a strand which is comparatively smooth and strong. One is a short, fluffy, fringy yarn, in which the longer fibres have gravitated to the core, and the shorter constitute a covering. The other is compact, solid, strong, like a cotton yarn. The difference between the yarns extends itself to the fabrics woven from them. Woollen cloths as they come from the loom are loose, open, rough, and must be thoroughly fulled or felted. The worsted cloth has a hard, smooth finish, with the characteristics of the weave distinctly visible, and the finishing processes include little or no felting. These differences in the manufacture of woollens and worsteds involve the use of intermediate machinery so fundamentally unlike as to make them two distinct branches of manufacture. The machinery employed in worsted is much the most expensive and complicated. This fact partly explains why this branch was so long in taking root in this country. Another explanation is found in the early tariff acts, where worsted goods were uniformly recognized as products not made in the United States, and apparently not expected to be made, and, therefore, always subjected to lower duties than those applied to woollens. It was not until the tariff act of 1867 was passed, that Congress finally realized that here was an industry susceptible of easy and great development.

In the annual report of Hon. James Guthrie, Secretary of the Treasury in 1854, there may be found a memorial from the Chamber of Commerce of Bradford, England, transmitted through the British minister in Washington, praying for a rebate of the twenty-five per cent. duty then existing upon worsted stuff goods, on the ground that such goods did not come into competition with any products manufactured in the United States, and the lower duty would therefore do no harm to anybody here, while it would "confer a great boon upon the trade of Bradford." The request of these memorialists was cheerfully complied with in the tariff of 1857, and the beginnings of our worsted industry still further delayed. To-day the city of

Bradford, the great English centre for the manufacture of all kinds of worsted goods, finds itself in competition for the American market with some of the largest and best appointed textile mills in the world, most of which are located in the New England states, and which produce every year, for the clothing of the American people, more worsted goods than Bradford ever dreamed of sending here. The growth of these mills comprises the most important and interesting chapter in the more recent history of the New England wool manufacture, and we shall endeavor to present it more fully than it has hitherto been written.

The researches of Mr. Weeden have proved that the worsted manufacture was not wholly unknown in the colonial days. In 1696, John Cornish, a humble dyer, comber, weaver and fuller, died in Boston, and the inventory of his effects warrants Mr. Weeden in speaking of him as "the first organizer of the worsted industry in this country." He dyed wool and combed it, using two furnaces and two hand combs, and wove with four looms. Serge was in these looms at the time of his death, which, when finished, would be worth 3s. 6d. per yard. It was worsted, or partly worsted. The probability is that Cornish chiefly made worsted yarns for knitting purposes; and the wonder is, since we know of the existence of one wool-comber in those early days, that there should exist no record of any other, for even then the worsted industry had assumed great prominence in England, and there must have been many hand combers among the emigrants to this country.

However, we hear no more about worsted until 1842. Considerable controversy has arisen as to who is entitled to the credit for the first introduction of the manufacture of worsted dress goods in the United States. Undoubtedly they were first made by the Ballardvale Company, incorporated in January, 1836, chiefly owned by John Marland, and afterwards by J. P. Bradlee, of Boston, under whom it gained the honorable distinction of being the first American mill to manufacture fine white flannels. Associated with Mr. Marland was Jeremiah S. Young, his brother-in-law, formerly a clergyman at Portland, Me., and afterwards the first treasurer of the Pacific Mills, and a leading spirit in its organization, a man of great business talents and energy. Also associated with him was Joshua Ballard, afterwards treasurer of the Hamilton Woollen Company, whom Mr. Marland invited to become associated with him in the flannel manufacture. Ballard began at the very bottom, learned to sort wool, to spin yarns and to weave fabrics, and made himself a thorough-going manufacturer. Whether Marland, or Young, or Ballard first conceived the idea of making worsted delaines, the writer is unable to state. It appears to be the fact, however, that they began to make worsted yarns in this mill as early as 1842, on machinery imported for that purpose by Charles Barnes, of North Andover, who went to England to secure it. Prior to this date, worsted yarns were undoubtedly made at this mill by hand combing, for Mr. Joseph Walworth, now the wool buyer of the Pacific Mills, was employed there as a hand comber. The Ballardville Mill has still another title to distinction, in that it first introduced double-spinning in this country in 1836.

The new worsted machinery was placed in a second building, constructed especially for it, and the manufacture continued to be carried on here, by the original company, until 1850, when the worsted plant was leased to Jeremiah S. Young, who transferred the whole business to the Pacific Mills in 1853, including most of the skilled help connected with it. Mr. Marland had fifty looms at work weaving delaines, which were printed by the block process at North Andover. All the wool was combed by hand, and the experiment extended to delaines for printing, and to others dyed in the piece.

In 1842 the Amoskeag Company concluded to enter upon this industry, and it invited Mr. Ballard to fit up a little cotton mill owned by them at Hooksett in preparation for the delaine manufacture. We find it recorded in a biography of him that "here Mr. Ballard made the first mousseline delaines manufactured in the United States." Two hundred looms were placed in the mill, and the goods were printed at Greenwich, R. I. This Hooksett Mill continued in operation about seven years. In 1846 Mr. Ballard was invited to become resident agent of the Hamilton Woollen Company at Southbridge, and here he continued to make these goods, in the manufacture of which the Hamilton Company is said to have started in 1844. There is a confusion of claims to priority, represented in these dates, which indicates that the manufacture was started at at least two points at very nearly the same time.

In the meanwhile several stockholders of the Amoskeag Company, foreseeing a great future for the new industry, organized in 1845 a new company, which they called the Manchester Mills, located at the New Hampshire town of that name, building one of the largest mills New England had yet seen, for the manufacture of delaines. At first the Manchester Company used carded wool only. Combing machines were introduced about 1855, very shortly after they had superseded the hand comber in England and France. The wool was carded on what was called a tandem card, and spun on a mule by a process similar to that of cotton spinning. The wools used were a high grade of Ohio and Pennsylvania merino. The Manchester Mills printed their own goods from the start. All delaines had previously been printed by hand, on what was known as the block machine, a slow and expensive process. At Manchester the so-called Birch machine was used for a time; but the use of the cylinder for printing calicoes, at Manchester, almost immediately suggested the similar method for printing delaines now universally adopted. The first use of the printing cylinder for this purpose was at Manchester. The original delaines made by this company were goods averaging about seven yards to the pound. The fashion which made them popular changed about 1868, but printed goods are still made at these mills, weighing about eleven yards to the pound, and chiefly for summer wear. The early popularity of the fabric may be inferred from the fact that the Manchester Mills made delaines of the value of \$1,000,000 per annum. The great success of the Manchester Mills led directly to the establishment of the Pacific Mills at Lawrence, for the same products. This corporation began making delaines out of woollen yarn; but almost immediately they imported the first combing machines ever brought to this country. Six of these machines, of the Lister pattern, were in operation in the Pacific Mills as early as 1854.*

* The following letter from Mr. Joseph Walworth, the veteran wool buyer of the Pacific Mills, throws an interesting light upon the first experience with combing machines in this country:

"LAWRENCE, November 19, 1896.

"DEAR SIR:—In answer to your questions, would say that J. S. Young, Esq., the founder of the Pacific Mills, closed up in Ballardvale in the fall of 1852. Mr. Young and Mr. Holmes, my predecessor, went to England in 1853; and Mr. Young, contrary to Mr. Holmes' advice, bought French combing machines and French spinning frames. In the winter and spring of 1854 the French combs were set up, but no one could run them, except a Frenchman who had come over to set them up, who would not run them at less than \$10 per day for his wages. The machines delivered a 'pushed' or irregular sliver. The Pacific failed to run them, and Mr. Holmes went to England and bought a few Lister combing machines, and hired a man in Bradford to come over with them as overseer. This all happened in the early part of 1854.

"Yours truly,

"JOSEPH WALWORTH."

At about the same time the New England Worsted Company at Saxonville, Mass., began the manufacture of worsted yarns, of which they sold three hundred and fifty thousand pounds annually, and also the manufacture of bunting. Another mill at Framingham also made bunting of very good quality, but it was not until the Civil War that the latter manufacture was successfully established.

In 1855, according to the Massachusetts census of that year, there were seven worsted mills in the state, producing eight million one hundred and eighty-nine thousand nine hundred and thirty yards of cloth, valued at \$1,029,000. There were small mills at Canton, Chelmsford, Framingham, and one at Lowell, making fancy goods, cashmerets, etc., the remainder of the mills being yarn mills.

Large quantities of these delaines were printed in Rhode Island. The Dunnell Manufacturing Company, at Pawtucket, one of the oldest, and at that time, probably, the largest print works in the country, was especially successful in this work; and very notable improvements in the methods of printing and in the appearance of the goods date from this period. In 1858 the Pacific Mills put into operation a printing machine which printed sixteen different shades and colors in once passing the fabric through it.

The Washington Mills was the first to embark in the manufacture of the all-wool fabrics, known as cashmeres, in the production of which the French have achieved such marvellous results. The Arlington Mills first successfully undertook the manufacture of alpacas, mohairs and brilliantines, and its goods immediately took rank with those made at Bradford, the home of this particular group of fabrics.

I have referred incidentally, above, to a number of the New England Mills engaged in the manufacture of worsted dress goods; the enumeration would be incomplete without reference to several others which have exercised a marked influence upon the development of this branch of industry, notably the Atlantic Mills, at Providence, R. I., and the Lorraine Company's mills at Pawtucket, R. I., founded and owned by W. F. and F. C. Sayles.

The worsted manufacture was long confined abroad to stuffs intended for women's wear. Not until about 1860 did the French and English manufacturers begin to apply this process to men's wear goods; and it was not until 1867 that it was realized in the United States that here was still a new field in wool manufacture open to enterprising manufacturers. It is agreed that the first American whose attention was attracted to the matter was Mr. E. R. Mudge, of the Boston Commission-house of Sawyer, Mudge & Co. Mr. Mudge was one of the United States Commissioners to the Paris Exposition of 1857. While there he observed among the French textile exhibits some very attractive worsted suitings for men's wear, made out of the short stapled merino wools. Upon returning to this country he at once made inquiries as to the possibilities of obtaining similar wools of domestic growth. Finding that the Ohio merino wools were admirably adapted to the purpose, he sent to France for combing machinery, for the Washington Mills, of which he was the selling agent and a director. In the course of a few months the goods were on the market, and selling freely, as French-made goods. Almost if not quite simultaneously other New England manufacturers had begun to make men's wear worsteds. About the year 1869, Mr. George Sykes, of the Hockanum Company at Rockville, Conn., while in England, was shown samples of a new fabric for men's wear then being manufactured in that country, and made out of the same quality of wool he was using at home in the making of woollen goods. The improvements then recently made in the wool-combing machine permitted the use of this short stapled wool in the making of tops for the spinning of worsted yarns. Impressed with this discovery, which marks one

of the greatest of recent advances in the wool manufacture, Mr. Sykes hurried home, and induced Eben, Search and Company, of Philadelphia, yarn spinners, to put in the machinery necessary to spin these yarns, and before the end of the year, the Hockanum mills had their own worsted suitings upon the market, in qualities equal to any made abroad. From that day a constantly increasing number of New England mills have been equipped for the manufacture of worsted coatings. While the woollen mills still predominate in number, yet the tendency of the times, under the stimulus of the long-continued popularity of worsted goods, has been steadily in favor of the increase of worsted mills. In Rhode Island, by the census of 1890, the products of the worsted mills largely exceeded those of the woollen mills; there were \$22,319,684 worth of worsteds made, and only \$9,884,945 of woollens. Rhode Island indeed made more worsteds than any other state in the Union,—more than one-quarter of the total product of the country. Massachusetts came second, with a worsted product valued at \$21,933,775, and these two states together manufacture more than one-half of all the worsted goods made in this country.

Before leaving this branch of the subject, we will briefly allude to the origin of three minor branches of the worsted manufacture, all of which owe their beginnings in this country to the enterprise of New England men: worsted braids, bunting and mohair plushes.

Perhaps no American manufacturer has contributed more to the diversification of the wool manufacture than the late Darius Goff, of Pawtucket, R. I., who died in that city April 14, 1891. He was the son of Richard Goff, who established a fulling and cloth-dressing mill at Rehoboth, in 1790, the same year in which Samuel Slater worked out his cotton-spinning apparatus in Pawtucket, seven miles distant. This mill, which was a type of the fulling mills all over the country in the beginning of the century, he operated until 1821; and for the last five years his son Darius was one of his helpers about the mill. So that the entire history of the woollen manufacture in New England is covered by the experience of these two generations of one family. After experience in other branches of the industry Mr. Goff determined in 1861 to take up the manufacture of worsted braids, which had hitherto been a complete failure. Some idea of the courage and persistence of the man is conveyed in the statement that after starting his braid mill, Mr. Goff continued to manufacture at a loss for seven years, but all this time he was improving his machinery and making a reputation for the excellence of his product. In the end the home market was conquered, and the mill became one of the most conspicuous of New England's successful enterprises.

In 1882 Mr. Goff detected another field into which the American wool manufacture had not yet entered; and although he was then a venerable man, he determined to inaugurate the plush manufacture here. This manufacture was at that time confined to France and Germany, where the machinery used was guarded under lock and key. Mr. Goff sent a representative abroad to get some idea of the character of this machinery. He returned utterly baffled. Thereupon Mr. Goff set to work to invent his own machinery; and at the end of five years, after the failure of repeated experiments, a new loom of novel construction was perfected, upon which this pile fabric was woven, for the first time with power, and in a manner that equalled the finest qualities of plush made abroad. Other successful experiments in the improvement of plush-weaving machines have since been made by the Sanford Mills, at Sanford, Maine, and very nearly the entire domestic consumption of this fabric is now of home manufacture.


The late General B. F. Butler, in a speech which he made in 1872, made an allusion

to the establishment of the bunting manufacture in the United States, which will serve as an account of the beginnings of that industry, for which he was so largely responsible. "No American ship," said General Butler, "ever fought under a yard of American bunting. We were dependent upon England during the whole of the war for the material of the American flag. The worsted article of which it is composed has never been successfully manufactured here. During the war, while it cost in England no more than it did before the war and does now, the English manufacturers put up the price to some thirty-six dollars in gold, while the cost for its manufacture (the finest standard quality) was between eight and nine dollars in gold. Congress passed an act giving the preference to American bunting, and also put on a tariff, which I admit was highly protective. The consequence has been that a single manufactory being started, the price of the finer qualities of bunting has been brought down to ten dollars in gold, and improvements have been made in the manufacture of the American flag, so that it presents an appearance of which any American may well be proud, as an American manufacture, to say nothing of the memories that cluster around it. Formerly that flag was made by sewing together bits of bunting, and for stars to make the Union seventy-two pieces of cotton cloth were sewed upon it. Now a beautiful star is colored in by press-dyeing, and a very much superior flag is made."

CHAPTER XXVI.

THE NEW ENGLAND WOOL MANUFACTURE—Continued.

THE LATER DEVELOPMENT OF THE WOOL MANUFACTURE.

HROUGH various vicissitudes, with gradual improvement in mechanical facilities, and a constantly widening range of production, the New England wool manufacture made its impress on the business development of this section of the country, as one decade followed another. During most of the period preceding the Civil War it was subjected to much less favorable tariff conditions than the cotton manufacture, and for that reason, as well as for others, its growth was less rapid.

The tariff of 1832 was much more favorable to the woollen interests than that of 1828, to which allusion has already been made, not only because of its wider application of the specific form of duty, but because it released the coarse wools from the heavy duties heretofore imposed, and thus stimulated the production of low-grade blankets, goods for negro wear, heavy kerseys for overcoatings, etc. But this tariff had hardly gotten into operation before it was superseded by the compromise tariff of 1833, with its gradually receding duties, which went off sharply, at the end of nine years, so that the average duty on manufactured woollens was only twenty per cent., a prospect which did not encourage the building of new woollen mills, and we can find no records of any notable increase of machinery during this period. After two months of existence under the minimum duties of the compromise tariff, the Act of 1842 went into effect, whereby a duty of forty per cent. was restored to the great bulk of woollen goods, with a readjustment of the duties on wool, which was, on the whole, rather favorable to the manufacturers; and during the four years that this tariff remained there was a marked growth in the manufacture of the finer grades of goods,

notably broadcloths, which were now made in several mills of a quality nowhere in the world surpassed. There was a period during this decade when American broadcloths, made at various New England mills, of which the Slater mill, at Webster, Massachusetts, was perhaps the most conspicuous, were conceded to equal anything that could be imported, although the prejudice against domestic goods remained so strong that they were generally placed upon the market with foreign marks.

Mr. H. N. Slater once wrote that these superfine cloths, which his family had been manufacturing since 1818, had "never been sold directly to the merchant tailor as American. . . During many years our goods were made, ticketed and sold as foreign goods. No merchant tailor thinks of offering a gentleman a fine American cloth." It must be regretfully added that a great deal of the same prejudice exists to-day, although the occasion for it which formerly existed has passed away. It is narrated that the finest piece of broadcloth which ever left a loom was made by J. D. Lang at the Vasselboro (Maine) Mill, for exhibition at the London Fair of 1851. It was subsequently shown at the Centennial Exhibition in Philadelphia, and there awarded the merit of "a perfection unsurpassable." The wool was selected Silesian, costing, with duties and charges, about three dollars a pound, and containing one hundred and twenty picks to the inch.

The tariff of 1846 put an end to the development of the broadcloth manufacture. At the time of its passage, no less than eighteen hundred looms were employed in its manufacture, nearly all of them in New England. Within a few years thereafter every one of those looms was stopped, or had been diverted to inferior grades of goods. The blanket manufacture was another branch of the industry which suffered disastrously from the unscientific adjustment of that tariff. While reducing the duties on all woollen goods to twenty, twenty-five and thirty per cent., it placed a uniform duty of thirty per cent. upon wools of every description. The coarse wools used in the blanket manufacture could no longer be imported for use in a product upon which the duty was only twenty per cent. To the extraordinary mal-adjustment of that tariff we may attribute much of the embarrassment which early overtook the large corporations at Lowell and Lawrence. The only branches of wool manufacture which continued with any great activity were those which, like flannels, were supplied by the common wool of the country—so superior in its spinning qualities as in itself to afford an advantage over the foreign manufacture. There was no longer any demand for any but the common wools; and the Saxony wool industry, which had recently made great progress among the New England farmers, disappeared with the manufacture of fine cloths, which had called it into existence. Professor Taussig states that during the period of the existence of this tariff, "the finest grades of woollens were not made at all, although the manufacture of cloths of ordinary quality (so-called cassimeres and similar goods) continued to show a regular growth, confined mostly to those branches which used domestic wools." *

The truth appears to be that so far as progressive development is concerned, this period was the least notable of any in the first century of the American wool manufacture, notwithstanding the fact that it witnessed the building of the great corporations at Lawrence, and was marked by notable mechanical advances, including the introduction of the Crompton loom, which brought the fancy cassimere manufacture, the first appearance of the Jacquard loom at Woonsocket, and in the Blackstone Valley.

The tariff of 1857 was largely brought about by the efforts of wool manufac-

* "The Tariff History of the United States." By F. W. Taussig, p. 146.

turers. They recognized the hopelessness of seeking higher duties in the existing temper of the people, but they succeeded in somewhat bettering their economic situation, by reducing the duties on their raw material, the new law admitting the cheap grades of wool free of duty and imposing a lower duty upon the remainder. The manufacturers had hardly begun operations under the new law before they were overwhelmed in the financial crash of 1857, which scattered ruin far and wide among them. Mills that had withstood all previous vicissitudes went down like rows of bricks. Fortunes accumulated through years of toil and struggle vanished in a night. The disasters of the panic of 1837 were exceeded both in number and in extent. The crisis of '57 was particularly severe upon the wool manufacture. The bankruptcy of many of the largest corporations ensued, causing the downfall of a number of the leading commission houses and the collapse of smaller woollen mills located in all parts of the country. For a time wool prices were merely nominal, and many descriptions were unsalable at any price. The recovery was gradual, but when once under way it was followed by an activity in manufacturing which equalled that following the tariff of 1842. The exact status of the New England wool manufacture, in 1859, or just prior to the Civil War, has been made a matter of record by the diligent inquiry of Mr. George William Bond; and the following table, prepared by him for the report of the Boston Board of Trade in that year, is reproduced as the best record there is of the location of New England wool machinery just prior to the war, and the character of the goods they were engaged in manufacturing at that time:

WOOLLEN MACHINERY IN 1859.

TABLE SHOWING THE QUANTITY AND CLASSIFICATION OF WOOLLEN MACHINERY IN NEW ENGLAND.

	Maine.	New Hamp- shire.	Vermont.	Massachu- setts.	Connecticut.	Rhode Island.
Satinets	9	3	22	165	112	33
Cassimeres	28	40	44	285	95	82
Cotton-warp cloths and carp. . .	. .	. .	. .	82	. .	. .
Stocking yarn and hosiery . .	6	12	6	30	74	. .
Worsted and woollen yarn . .	. .	10	. .	76	. .	8
Blankets and flannels . . .	40	81	11	185	19	. .
Delaine . . . . .	. .	58	. .	67	. .	. .
Carpets . . . . .	. .	2	. .	62	70	. .
Cashmerets . . . . .	. .	4	. .	5	. .	. .
Shawls . . . . .	. .	. .	. .	10	. .	7
Feltings . . . . .	. .	. .	. .	14	30	. .
Negro cloths and jeans . .	. .	. .	. .	. .	. .	53
Linseys and dometts . . .	. .	. .	. .	. .	. .	42
Sundries	8	18	39	18	9	. .
Total number of sets . . .	91	228	122	999	409	225
Number of establishments.	32	56	56	154	93	56

The outbreak of the Civil War, as had been the case in 1812, stimulated the manufacture of woollen goods beyond all precedent. It may be said to have re-created the industry. The government immediately made large drafts upon the manufacturers, to supply clothing for the army and navy; and these demands continued and increased throughout the war. All the uniforms of the Union army were made in American mills; all the uniforms of the Confederate Army were made of imported cloth, mostly of English manufacture; and thus the advantage of the north in having these woollen mills located in her midst became more obvious than

ever before; while the absence of woollen mills in the south, as the blockade grew more stringent, became a source of annoyance and suffering. The activities of war times stimulated business in every direction; high prices and quick sales were the rule; woollen machinery ran day and night, and the machinery-makers could not keep up with the demand for new equipments; many mills which had been erected to manufacture cotton were converted into woollen mills—a tendency which was also accelerated by the prolonged cotton famine.*

As the financial exigencies of the government increased, the tariffs were made higher and higher, giving the American manufacturers more complete control over the home market than they had ever had before. Large profits were easily made—the more easily, perhaps, because the conditions were not such as to stimulate to the usual pains and care in turning out goods. The struggle was to get the raw material through the mill with the least possible delay, and the character of the product necessarily suffered. Nevertheless this period was notable for the development it witnessed in extending the variety of goods made in the United States; and when it ended there was no kind of fabric, for which there existed any popular demand, the manufacture of which had not been successfully attempted in New England. With the close of the war there was, of course, some reaction, but there was no prostration, and the wool manufacture has never lost any of the great advance it made during those years.

Perhaps the most notable event of this period, in connection with New England wool manufacture, was the organization of the National Association of Wool Manufacturers, the preliminary meeting for which was held at Springfield, Mass., on August 10, 1864. This meeting was followed by another in the same city, November 30, 1864, at which the organization was completed. The moving spirit of the organization was Hon. Erastus B. Bigelow, who became its first president. The object of the organization was stated to be “the promotion of harmony and co-operation among the different classes of American producers.” This had reference, not merely to the producers of different varieties of woollen goods, although that was prominently in Mr. Bigelow’s mind, but also to harmony between the wool manufacturers and the growers of the raw material. For years, whenever there had been a revision of the tariff under consideration, an antagonism had existed between these two branches of a related industry, which had resulted in contention over the adjustment of duties, out of which the growers sometimes emerged with the advantage, sometimes the manufacturers, and sometimes neither. It was the ambition of Mr. Bigelow’s life to arrange an adjustment of duties which should reconcile these apparently antagonistic interests, so that neither should prosper at the expense of the other, but both be the gainers by a law which did justice to both. To this end Mr. Bigelow arranged for a joint convention between growers and manufacturers, which was held at Syracuse, N. Y., on December 5, 1865. The convention lasted three days, and was harmonious and successful from first to last. Out of the co-operation to which the two interests there pledged themselves, grew the famous wool and woollen tariff of 1867, the principle underlying which, without essential modification, remained in all subsequent tariff legislation down to the act of 1894, when wool was placed on

* It is a striking fact, however, that some of the chief ventures of cotton mills into the woollen field were failures. Thus the Suffolk mills at Lowell made an extensive experiment in the manufacture of cassimeres, which turned out so disastrously as to deplete their capital. The Suffolk experiment was also repeated by the Tremont—both mills being at the time under the same treasurer, Henry V. Ward—with results nearly as disastrous. The Lawrence mill was equally unfortunate.

the free list against the nearly united protest of the New England wool manufacturers.

This is not the place to enter into any analysis of the principle upon which the tariff of 1867 was founded. The keystone of the legislation was the proposition to place the two branches of the industry in such a relation to each other, under the tariff, that both should prosper equally, and neither should thrive or suffer at the expense or advantage of the other. The status of the wool manufacture at the census of 1890, to which reference was made in earlier pages, justifies the conclusion that the tariff of 1867 and those which came after it, adopting its main principle, have been abundantly vindicated. Nor could any experience testify more strongly to the present stability of the New England wool manufacture than that through which it has passed in the last three years. In 1894 occurred a tariff revision which suddenly shifted the industry, from the position it had so long occupied, to the basis of free raw materials. It was the most radical change in the economic status of a great industry that had ever been effected, by one act of legislation, in any country; and the strain was one of tremendous severity. Its intensity was increased by the prolonged business depression which preceded and followed this act of legislation. That so few establishments in New England should have gone down under the pressure of these events, is conclusive proof of the sound financial management that distinguishes them. It justifies our belief that the wool manufacture has a prosperous future before it in New England. All the signs indicate that, so far from migrating elsewhere, it has a tendency rather to concentrate itself, if not in New England alone, at least in the North Atlantic states. All predictions to the contrary, this section more than holds its own in the wool manufacture as the years roll by. There are occasionally new woollen mills established in the west; but the actual production of western mills in woollen and worsted goods is smaller to-day, in its proportion to the whole production, than it was twenty-five years ago. In the earlier days of small mills it was common to find one, two, and three-set mills, located at frequent intervals in the agricultural states. These small mills have been gradually disappearing, and large mills do not take their places. In 1870, 80 per cent. of all the woollen machinery was located in twelve states, of which all were eastern and middle states except Ohio, Indiana and Illinois. All the other states of the Union had 19.92 per cent. of the machinery. In 1890 these twelve states contained 89.83 per cent. of the woollen machinery, while all the other states had decreased to 10.17 per cent. But, in the meanwhile, Ohio, Indiana and Illinois had also largely decreased in their capacity—Ohio from three hundred and thirty-four sets of machinery in 1870, to one hundred and twelve in 1890; Indiana from three hundred and forty-six to one hundred and twelve; and Illinois from two hundred and fifty-one to seventy-one sets. In the meanwhile, also, the great worsted industry has grown up in the east; there has been practically no worsted manufacture developed in the west. It is in this latter branch of the industry that the chief development of the future lies, and New England is destined to still further distinguish herself.

Of course there have occurred during these later years great mechanical changes in the woollen mills of New England—so great indeed as to constitute a new order of manufacturing. The advance, since the close of the Civil War, may be said to be almost as great as occurred in all the years that preceded it. But the peculiarity of this advance lies in the fact that it has been accompanied by no fundamental changes in the principles of the mechanism underlying any of the processes of the wool manufacture. All the fundamental inventions were made long prior to the time of which we are speaking. The subsequent advance has all been in the direction of improv-

ing and perfecting those fundamental inventions, of combining and expediting their processes, and thereby contributing to economy of production and the multiplication of products.

Self-feeders on the first breaker and finisher have been applied to card machines, dispensing, it is declared, with half the help in the card-room. Improved winders, dryers, and cloth-pressers give greatly increased rapidity to the processes of finishing. Looms have been greatly perfected. In weaving flannels, a width of three yards at once, seventy to seventy-five picks a minute are woven as economically for the endurance of the machine, and excellence of the cloth, as forty-eight to fifty picks a minute were in 1860. For making cassimeres, the wide loom is generally and profitably substituted for the narrow loom of 1860. Fifty-two yards of Brussels carpet per day now can be woven in certain improved looms by one girl, week in and week out; whereas, in 1860, fourteen yards were a good product with the same help in the same time. These are but illustrations, not enumerations, of the improvements of this period, for the list could be continued indefinitely. Still, with these marked improvements, even more has been accomplished by the countless small economies, minor processes and manipulations made necessary by the demands of the home consumer for cheap and, at the same time, perfect and strong goods, which have been imperative upon the manufacturer.

In common with these mill improvements, which have resulted in a great and gratifying advance in the quality and excellence of American woollen fabrics, there have come some changes, less radical in results, in the methods of business. There has grown up a greater independence of the commission house, and the tendency is steadily in the direction of the direct sale of his goods by the manufacturer. The intervention of the jobber has almost entirely disappeared, and the producer and the consumer are thus, by a natural evolution in keeping with economic law, being brought closer and closer together. There is room for much greater advance in this direction, and forces are at work which steadily tend to bring it about.

While it may now fairly be claimed that the average New England mill is, in mechanical equipment, the equal of foreign mills, it is not possible to insist that the New England wool manufacture is already fully abreast of its development abroad. It lacks, not in the facilities for production, nor in mechanical excellence, but rather in the character of the product, from an artistic point of view; and this lack is due chiefly to the lack of careful training, in the technique of design and fabrication, on the part of those who carry on the industry. Of late years a realization of this deficiency has begun to appear among our manufacturers; and the recent establishment of a textile school at Lowell is one of the tangible and gratifying evidences of it.

Those who have been interested to follow this somewhat cursory sketch of the birth, the growth, the vicissitudes, and the triumphs of the New England wool manufacture, can hardly fail to have been impressed, as its author has been, with certain peculiarities of the industry, in comparison with others, which distinguish it as an occupation requiring a high degree of skill and intelligence on the part of those who successfully conduct it. No branch of industry makes larger demands upon those elements of capacity and character which win success in manufacturing. There is that about the industry which attracts men of large ideas and capabilities. It offers ample scope for the employment of faculties of the highest order, and the field of success is comprehensive enough to fill the highest business ambition. The art of wool manufacturing becomes attractive and absorbing by its varieties, its possibilities, and even by its uncertainties. There is no recognized limit to attainment within it.



J. Farley

Success serves but to stimulate to new endeavor. The creative instinct may find in it opportunity for exercise either in mechanical construction or in new methods and varieties of fabrication. Artistic taste is constantly spurred to adapt beauty of design to harmony of color, to combine the ornamental with the useful. There is also an inspiration in the thought of developing and perpetuating a great national industry, venerable because of its antiquity, benevolent because of its intimate relationship to the comfort, the happiness, and the prosperity of the people. In the building up of this industry the men of New England have been easily and always first among their countrymen; and we close the record of their struggles and achievements with the expression of a firm conviction that they always will be.



JONATHAN SAWYER.

JOHN SAWYER, the ancestor of the subject of this sketch, was a farmer in Lincolnshire, England, and the emigration of his sons to New England renders it probable that he was a mere nonconformist or separatist bound by the ties of land-ownership to his native country, while his freer and perhaps more adventurous sons sought the more congenial liberties of the new world.

These sons, William, Edward and Thomas, crossed the ocean about 1636, and one of them, Thomas, went to Rowley, Mass., in 1643, where he had land granted him. He went to Lancaster, Mass., about 1647, and was one of the first six settlers of that town and was one of the prudential managers appointed by the General Court upon its incorporation in 1653. He married, in 1648, Mary Prescott, a daughter of John Prescott, who may be called the founder of the town.

Thomas Sawyer and his family passed through all the vicissitudes and hardships to which the people were subject in the early history of the town. No settlement suffered more severely than Lancaster during the Indian wars. In the massacre of 1676 the town was practically destroyed and its inhabitants either killed or made prisoners, except those who found refuge in the two garrison houses, one of which was Thomas Sawyer's. One of his sons was killed and another subsequently captured and taken to Canada; where, while a prisoner, he offered to put a mill on the Chambly River on the condition that he and his fellow-prisoners should be released. The Indians, however, so the story goes, insisted upon his death, and he was tied to a stake with a view to immediate torture and execution, but by the intercession of a friar, who claimed to hold the "Keys of Purgatory," he was released, and in accordance with the agreement with the French Governor, he erected the first saw-mill in Canada. (It is believed that the name of Sawyer has been associated with mills in every generation down to the present.)

His descendants remained in Lancaster, occupying lands in that part of the town which, with portions of Groton and Stow, was incorporated as the town of Harvard in 1732. Phineas, the father of Jonathan, was born in Harvard in 1768, where he married Hannah Whitney. In 1800, at the age of thirty-two years, he moved to Marlborough, Mass., and in the part that is now Hudson, he, in 1806, erected a cotton mill. He carried on the business of manufacturing cotton yarn and cloth until the close of the War of 1812, when the infant industries of the country became crippled by foreign competition.

Jonathan Sawyer, the youngest child of Phineas and Hannah (Whitney) Sawyer, was born in Marlborough, June 7, 1817. He attended the public schools of his native town until 1829, when, at twelve years of age, after his father's death, he removed with his mother to Lowell, Mass. At Lowell he attended school and was a member of the first class which entered the high school of that town. Bishop T. M. Clark, of Rhode Island, was at that time the principal of the high school, and among his classmates were Benjamin F. Butler, E. A. Straw, afterwards Governor of New Hampshire, and Gustavus V. Fox, of the Navy, who was during the Civil War, Assistant Secretary of the Navy under Gideon Welles.

At the age of sixteen he became an inmate of the family of his brother, Alfred Ira Sawyer, who at that time was operating in Dover, N. H., a grist-mill, a custom carding and cloth-dressing mill, forming a plant, which was the foundation of the Sawyer Mills, which since that time have been steadily growing in repute, and which are now extensively engaged in the manufacture of cassimeres, worsteds and cheviots. The first step in the various changes, which the original plant has undergone, was taken in 1832, when the old woollen mill was enlarged and adapted to the manufacture of flannels. Mr. Sawyer remained with his brother two years, alternating attendance at school with work in his brother's mill, and in 1835 returned to Lowell. After his return he was a pupil for a short time in the Wilbraham Academy. After a second term at the academy he entered a woollen mill in Lowell as a dyer, and, soon familiarizing himself with that business, he began dyeing on his own account, and so continued until 1839. After his marriage, which occurred in that year, he went to Watertown, N. Y., and served two years and a half as superintendent of the Hamilton Woollen Company. After leaving that company he operated a mill in Watertown on his own account for the manufacture of satinets, which he carried on until 1849. In that year his brother Alfred died, leaving only young children, and Mr. Sawyer removed to Dover, and, associated with his brother Zenas, under the firm name of Z. & J. Sawyer, continued the operation of the Sawyer Mills in the manufacture of flannels. At the end of two years Francis A. Sawyer, another brother, took the place of Zenas, and the firm name was changed to F. A. & J. Sawyer. Until 1858 the flannel manufacture was carried on in a wooden mill erected in 1832, but in that year a mill near the old one, known as the Moses Mill, was bought, and in 1860 enlarged to a four-set mill, in 1863 to eight sets, and in 1882 to sixteen sets. The old mill was operated until 1872, when it was replaced by a new mill with eighteen sets of cards, which now contains twenty-three sets of cards, and with preparing and finishing machinery sufficient for both mills or forty sets. Since 1866 the mills have been entirely devoted to the manufacture, as above mentioned, of fine cassimeres, worsteds and cheviots, and their goods with the Sawyer mark are widely known and have a high reputation.

In 1873 the firm was incorporated with a capital of \$600,000, under the name of the Sawyer Woollen Mills, and its first officers were Francis A. Sawyer, president; Jonathan Sawyer, treasurer, and Charles H. Sawyer, agent. The present officers of the company are Charles H. Sawyer, president; William D. Sawyer, treasurer, and Charles Francis Sawyer, superintendent. A technical statement of the product of the company comprises staple and fancy woollen and worsted suitings, trouserings, overcoatings and uniform goods.

Since 1866 the company has sold its own goods. Francis A. Sawyer died June 16, 1881, but the old firm of F. A. & J. Sawyer still continues, with offices in New York, and the sales are conducted by them, the corporation and the firm being really the same parties in interest. To the enterprise and executive ability of Mr. Jona-



Charles H. Sawyer

than Sawyer the successful establishment of the Sawyer Mills and their unwavering prosperity have been chiefly due. The unspotted reputation, which he won for the strictest integrity, his clear foresight, his conservative prudence, mingled with great energy, his keen understanding of the tastes and demands of customers, carried his firm and corporation safely through the intricate channels of financial depressions at various periods, without even for a moment touching the rocks and shoals which beset them.

Mr. Sawyer, while demanding of every man faithful work, and never excusing a failure to strictly conform to the rules of business and labor, was possessed of a warm heart and a generous hand. While with one hand exacting strictly his dues, with the other he would lavishly relieve the suffering and wants of those from whom he exacted them. He believed that charity, even when undeserved, was better than a cold refusal to give alms lest those asking might abuse the gifts, for he knew that charity like mercy is twice blessed, blessing him that gives and him that takes.

Mr. Sawyer was an early anti-slavery man, and later one of the founders of the Free-Soil Party. It goes, therefore, without saying, that he was not a seeker for office. Positions of honor and profit were freely offered to him, but almost invariably declined. His business and home were the sources of his happiness, though as a citizen he never failed to readily yield to all reasonable demands on his time and resources.

Mr. Sawyer married, June 25, 1839, Martha, daughter of Cyrus Perkins, of Barnard, Vt., and died at his home in Dover, June 20, 1891.

Their children were: Charles H. Sawyer, who married Susan Ellen, daughter of Dr. James W. and Elizabeth Cowan, of Dover; Mary Elizabeth; Francis Asbury, who married Emma K. Smith, daughter of Hon. Perry Smith, of Chicago, and died in 1889; Roswell Douglas, artist, who married Edwina Dean Lowe, of St. Louis, Mo., and died in Rome in 1894; Martha Frances, who married W. S. Bradley, of Fairfield, Vt.; Alice May, who married Dr. F. W. Payne, of Boston, and Frederick Jonathan, who married Isabella Dootsen.

CHARLES H. SAWYER.

CHARLES H. SAWYER, the oldest son of Jonathan and Martha (Perkins) Sawyer, was born in Watertown, N. Y., March 30, 1840. He attended the schools of his native town until he was ten years of age, when he removed with his father to Dover, N. H., and completed his education in the schools of that place. At the age of seventeen he entered the Sawyer Mills in Dover, then engaged in the manufacture of flannels, and began as an ordinary hand to study the business of a manufacturer as a profession. The mill was to him as much an institution of learning as the college, and his life has once more illustrated the folly of our modern educators, who look on the school-house as the only source of knowledge, and who seek legislative enactments against the service of minors in fields of industry, where their success in life can best be assured. Every process which the raw material passes through from sorting to finishing, became the subject of study to Mr. Sawyer, and mastering every detail as he went, he became, at the age of twenty-six, thoroughly proficient in the manufacturing art and was appointed superintendent of the mills. His service in that position began at a time when the owners of the mills were extending their operations and adapting their machinery to the manufacture of a high grade of woollens for men's wear.

Since Mr. Charles H. Sawyer became president of the Company in 1881, the general management of the mills, including the purchase of supplies, the manufacture of goods and the sales of products, has been in his hands. No man could have been better fitted for the responsible position which he holds. With a taste for the mechanic arts inherited from his earliest American ancestor, and more and more fully developed in each generation, with business qualities strengthened by a thorough education in that department of industry to which he early devoted his life, with an integrity and love for honorable dealing, which had been transmitted to him unimpaired by a father under whose teachings he entered on his career, he has conducted, and is now conducting, the Sawyer Mills with a reputation for faultless work and management exceeded by no similar establishment in New England.

It is not to be supposed that such a man has escaped the calls of his fellow-citizens for service in their behalf. In fiduciary positions and in those of a more public nature he has enjoyed the entire confidence of the community, of which he is a conspicuous member, and has been an influential factor in the promotion of its welfare. In his earlier days he served in both branches of the City Council of Dover, and in 1869, 1870, 1876 and 1877 was a representative in the New Hampshire Legislature. In 1881 he was a member of the staff of Governor Charles H. Bell, and in 1884 was a delegate to the National Republican Convention held in Chicago. But, though a political career was not entirely congenial to his tastes, further honors were in store for him. In 1886 his name was presented to the State Convention for the Gubernatorial nomination, and his choice as a candidate was ratified by a vote of nearly three-fourths of the Convention. His personal popularity largely contributed to the success of the Republican party in the ensuing election. He represented the state in several of the national centennial celebrations during his term of office, particularly at Philadelphia on the occasion of the centennial celebration of the promulgation of the Constitution of the United States, the centennial in New York of the Inauguration of President Washington, and at the laying of the corner-stone of the Bennington Monument.

The most prominent event in Governor Sawyer's term of office was his veto of the so-called "Hazen Bill," a measure designed to facilitate the leasing of certain railroads. This bill was promoted by one powerful railroad corporation and opposed by another. Just as the measure was upon its final passage, it was proved by testimony given before a legislative committee that attempts had been made by both the friends and the opponents of the bill to buy the votes of members of the legislature. In view of this evidence the Governor vetoed the bill, not basing his action upon any objections to its intrinsic merits, but upon the unfair methods used in its support. He thus acted in analogy to the principle which induces courts of justice to refuse to help either of the parties to an illegal transaction; the court refusing "not for the sake of the defendant, but because they will not lend their aid to such a plaintiff." The matter is well summed up in a few sentences of the veto message. "The most effectual way," said Governor Sawyer, "to check such practices is to have it understood that no bill attempted to be passed by such means can become a law. When the promoters of a measure see fit to offer bribes to members, they cannot be allowed to excuse themselves on the ground that their offers were not accepted. If it comes to be understood that unsuccessful attempts of this nature will not imperil the passage of a bill, such offers will become much more frequent. If the offer is accepted, neither party will be likely to disclose the fact. If it is rejected, it is, in this view, to be considered of no consequence, and hence no harm could be done to the prospects of the bill. The bare statement of such a doctrine is its best answer."



Alexander H. Tilden



Samuel B. Peabody

and through all the changing events of a long and active business career preserved his integrity unimpaired.

Mr. Peabody was the oldest son of Noah and Isabella W. Peabody, and was born in Sutton, N. H., January 13, 1839. In 1843 his parents removed to "the Bridge," and here he grew up a promising boy, developing those kindly qualities of head and heart which were marked characteristics throughout his life. He supplemented his common-school education by a course at the Tilton Institute, now known as the New Hampshire Conference Seminary, where he took a full preparatory course, intending to enter Dartmouth College. At the close of his preparatory course, however, instead of entering college, he followed out his inclination, which strongly leaned toward the medical profession, by entering the office of Dr. Lyford, at "the Bridge," where he remained a short time, and then removed to Lawrence, Mass., and studied under the direction of Dr. Sayforth. During this time, in order to obtain the necessary means to continue his studies, he taught school at Sanbornton Bridge, also in Northfield, and at Bellaire, O. At the breaking out of the Civil War, while he was in the office of Dr. Sayforth, of Lawrence, he enlisted in the Fortieth Massachusetts regiment, and served until the close of the war, participating in nearly all the engagements of his regiment, notably, the Siege of Suffolk, Va.; Baltimore Cross Roads, Va.; Siege of Fort Wagner, S. C.; Ten Mile Run and Barbers' Ford, Fla.; Drury's Bluff, Petersburg Heights and the Siege of Petersburg, Va.; Bermuda Hundred; Fair Oaks, and the capture of Richmond. His knowledge of medicine rendered him very efficient in the medical department of the army, and a portion of the time he was on detached duty. He was in the dispensary of Jarvis General Hospital, Baltimore; also in the office of the provost-marshal at Governor's Island, and was wounded at Petersburg. At the close of the war he entered the drug store of Burleigh Brothers, in Boston, and while here he met with a serious injury by falling through an open hatchway. In consequence of impaired health, caused by this accident, he returned to New Hampshire, and entering Mr. A. H. Tilton's mill at once took upon himself the task of learning the business in all its branches. His eminent ability as a business man was quickly made manifest, and shortly after the death of Mr. Tilton, in 1878, he became associated with the widow of Mr. Tilton in the conduct and management of his large manufacturing interests. He at once became practically the head of the firm, and upon the death of Mrs. Tilton, in 1886, the entire Tilton Mills property passed into his possession. Through his keen business foresight and energetic management the business rapidly developed, until, at the time of his death, June 25, 1889, the daily capacity reached about twelve hundred and fifty yards; he having also established relations with the well-known firm of Pillsbury Brothers, with the view to largely increase the production of these mills.

February 7, 1867, Mr. Peabody united in marriage with Elizabeth S., daughter of Darius M. and Elizabeth Richards, of New Bedford, Mass., and their family consisted of three children, only one of whom survives: Miss Isabella Weston Peabody, who resides in Tilton. Mrs. Peabody died February 22, 1886.

Mr. Peabody always manifested a lively interest in all matters tending to advance the welfare of Tilton, and all improvements of a public character found in him an earnest advocate and supporter. He was charitable and generous, and his hand was ever open to aid the suffering.

Politically he was a Democrat, and an earnest advocate of the principles of that party. He represented Tilton in the Legislature in 1881 and 1882, and had also been town clerk. He had served on the Board of Education, and was a director in the Citizens' National Bank at Tilton. He was prominently identified with the

Masonic fraternity, being a member of Doric Lodge of Tilton, and Master in 1880 and 1881; also a member of St. Omer Chapter at Franklin, Pythagorean Council of Laconia, and Mount Horeb Commandery of Concord.

At a Lodge of Sorrow held at Tilton, September 25, 1889, the following eulogy was pronounced upon Mr. Peabody:

EULOGY TO THE MEMORY OF
SELWIN BANCROFT PEABODY.
DELIVERED AT THE LODGE OF SORROW,
TILTON, N. H., SEPT. 25, 1889,
BY A. S. BALLANTYNE.

"It is with feelings of special sadness that I bring my feeble tribute of respect to the memory of our late brother, Selwin Bancroft Peabody. It has made me inexpressibly sad every time that my mind has reverted to the subject of his death. Cut down as he was in the prime of life, being just fifty, with large business interests devolving upon him, and with plans for still larger enterprises, there are few men, very few indeed, whose death would so much affect the material interests of our village. He was so well known to all that it seems almost superfluous to attempt any eulogy to his memory, but rather let his life speak for itself.

"Yet some things may with propriety be said. My first acquaintance with him was as an operative in our mill, where he worked a few months immediately after the close of his service in the War of the Rebellion. I found him unusually intelligent, and with an earnest desire and strong determination to rise in the world. How he succeeded in reaching the position he had attained at his death, you all know. If you desire to know how he was regarded outside of our own town, ask those who had business relations with him. They will tell you that he possessed business ability of a very high order, that his honesty and integrity were unimpeachable, that he was a true friend, one in whom you could with safety confide. He had been honored by his fellow-townsmen in being called to fill offices of trust and responsibility.

"He had represented this town in the legislature. He was also called to care for the moneyed interests of the village by being a director in the Citizens' National Bank, and those who were his associates can testify to the ability and fidelity with which he fulfilled these trusts. You honored him by making him a Mason in this Lodge in May, 1877. In 1878 he was appointed to fill the office of Senior Deacon; in 1879 he was elected to the office of Senior Warden; in 1880 he was elected Worshipful Master, and again re-elected in 1881, and to the ability with which he filled these positions every Mason present can testify. There was one floral tribute which was seen at his funeral which spoke volumes, and which I desire to emphasize, 'Our Benefactor.' Any man who has such a tribute as that paid to him has not lived in vain. To be a benefactor is to have made the world better for having lived in it, to have made somebody happier, and to have been the means, in some degree, of lifting off some of the sorrows and troubles of this selfish world. The religious society with which he was connected has sustained a serious loss. He was always ready to bear his full share of the financial responsibilities, and could always be depended upon. He has gone, and by just so much as his life was one to be commended, let us emulate his good deeds and strive as best we may to make up in our lives for those good qualities which his death has taken from us. Whatever his faults may have been, let us not attempt to either palliate or aggravate them, but cast over them the mantle of charity, and see to it that whatever we see to be faulty in others, we carefully avoid in our own lives."

The career of Mr. Peabody sufficiently indicates without a definite analysis his character. To have accomplished it, he must necessarily have possessed certain qualities without which it would have been a failure, instead of a remarkable success. His temperament was cool, his judgment was unerring, and his estimate of men was almost infallible. He was cautious and careful in making his calculations and reaching conclusions, but his calculations when made were almost uniformly correct, and from his conclusions no argument nor obstacles could swerve him. Underlying and supplementing all his qualities as a business man, was the experience of his early life at the lowest round in the commercial ladder, which made his progress steady and sure.



Charles H. French

CHARLES HOWE FRENCH.

CHARLES HOWE FRENCH, the son of Alexander and Hannah (Howe) French, was born in Ponkapoag, Canton, Mass., September 21, 1814. His early life did not differ from the ordinary life of a farmer's boy in those days. He worked upon the farm in the summer, and in winter attended the Blue Hill School.

The loss of his father and mother at an early age deprived him of that counsel, advice and love which he then so much needed, and his happiest hours were passed in the home of his grandmother, who had married General Nathan Crane and was living near by. Afterwards, he was for a year or two placed with a gardener and farmer at Watertown, and daily drove a load of vegetables to the Boston market. Later he was taken in charge by his uncle, Calvin Howe, at that time preceptor of the Milton Academy, where young French hoped to remain and obtain a good education. But this hope was dissipated by the death of his uncle, which occurred about a year later.

At the age of sixteen he was apprenticed to Mr. Jabez Comey, a millwright at Dedham, where he gained a thorough mastery of the science and practice of mechanics, a knowledge which afterwards was the chief source of his success in business life. After fulfilling his indentures, Mr. French was asked to assist Mr. William S. Otis in the building of one of the marvels of that day, a machine afterwards known as "The Otis Patent Steam Excavator." Mr. French accordingly came to Canton, where the massive machine was begun and completed, and thoroughly understanding its mechanism, he was selected to superintend its transfer and to put it in working order. He accordingly went with it to Worcester, Mass., and entered the employ of Carmichael, Fairbanks & Otis, who had a contract to build a portion of the railroad now known as the Boston and Albany.

The death of Mr. Otis, at the early age of twenty-six, while engaged upon this work, left Mr. French the only man competent to fill the vacant position. He was at once invited to join the firm, which was then changed to Carmichael, Fairbanks, French & Dillon. Mr. Dillon in after years became president of the Union Pacific Railroad, while Mr. Fairbanks went to Russia with the celebrated engineer, Whistler, and assisted in building railroads for the emperor.

This work having been completed, a new copartnership was formed between Mr. Carmichael and Mr. French; but the former, having had large experience as a contractor, soon received overtures from the Canadian government, to undertake the widening of the Welland canal. At the end of a year, Mr. Carmichael, having taken a contract at Brooklyn, N. Y., threw the whole responsibility of the canal contract upon Mr. French, who, in its arduous undertaking, was engaged five years; and so well did he perform his duty, and so honorable was he in his dealings with the engineers in charge of the work, that the Canadian authorities invited him to Montreal, where he was induced to spend another five years in the same class of work.

At the completion of this work, his reputation as a skillful, accurate and honest engineer, with a practical business knowledge, was fully established, and he returned to his native place, where his towns-people soon extended to him the presidency of the Neponset Bank, afterwards the Neponset National Bank, which office he accepted in 1851, and held until his death, with honor to himself and the approval and hearty commendation of the stockholders of the bank and of the community. Throughout

his management, and owing mainly to the confidence reposed in his judgment, the stock of the bank continually increased in value, and no investment was more eagerly sought than the stock of this corporation.

In 1852 he was chosen president of the Savings Bank, and continued to hold that office also until the time of his death, which occurred January 13, 1889.

In politics Mr. French was a Whig, as long as that party was in existence. He was a member of the General Court in 1853, and was appointed on the Committee on Railroads, and in 1854, having been again elected to the legislature, was placed upon the Committee on Banks and Banking. As a candidate, whose judgment and integrity commanded confidence, he was supported by his political opponents, showing the man to be of far more importance than the party.

It is needless to say that Mr. French appreciated the compliment, and it must have been a proud and happy moment for him when the result of these elections was announced, and he found that his friends had broken their allegiance to party to vote for one whom they loved and honored. In 1873 and 1874 he was elected to the Senate, and again placed upon the Committee on Banks and Banking, as well as Street Railroads.

Mr. French also had some experience in the militia, being colonel of the Fourth Massachusetts Regiment for about five years. At the breaking out of the war, he was active in every good work to assist in suppressing the Rebellion, and his heart and his purse were ever ready to respond to the calls of his country. He was one of the famous committee of "One Hundred," who were summoned by Governor Andrew to take measures to insure supplies to the Massachusetts troops who went to the front at the opening of the Rebellion.

In 1858 Mr. French purchased one of the ancient mill privileges in Stoughton, and took into partnership Mr. Henry Ward, who had practical knowledge of knitting machinery and the manufacture of fancy knit goods. Beginning in a small way, the business gradually increased, and soon became one of the largest industries in Stoughton. But, in 1880, this entire mill property was destroyed by fire, and, being only partially insured, the loss was very heavy. Thus in a night was swept away the accumulation of years. He now, at the age of sixty-six, with the courage and perseverance which characterized all his actions, decided to make a fresh start in his business career. Accordingly the old structures were replaced by new and more commodious buildings, thus giving employment again to the hundreds of men and women who, having worked solely in this industry, knew no other.

Mr. French did not hoard his honestly acquired gains. His hand was ever open to the calls of charity, and many are the families that have been entirely, or in part, supported by his bounty. He was always ready to assist a cause that was just or a case of suffering. He was one of the most prominent members of the Unitarian Church of Canton and served many years as its treasurer.

In 1854 he built a substantial stone house on a portion of the land granted to the Indians from Dorchester. In this delightful location, a short distance from the old road formerly connecting Massachusetts and Narragansett bays, he resided during the remainder of his life.

He married Almira, daughter of Deacon Leonard and Almira (Kimball) Everett, of Canton. Four years after her death, which occurred in 1885, Mr. French died, leaving two sons and two daughters, who still reside in Canton. A year before his death he married for his second wife Margaret Canby, of Fonthill, Canada, who survived him but a short time.

The sons, Charles H. and Abbott E., succeeded to their father's business, thus



Horatio Lyman

preserving the name of the old firm of French & Ward, and the son, Charles H., likewise succeeded his father in the presidency of the Neponset National Bank.

HORATIO LYON.

HORATIO LYON, the subject of this sketch, was for over half a century one of the leading business men in western Massachusetts, and he was one of the pioneers in the establishment and successful development of woollen manufacturing, which has contributed perhaps as much as any other single industry in giving the state its present industrial pre-eminence.

He was born at Brimfield, Mass., July 31, 1801, and died at Monson, March 14, 1879. For over sixty years he was a resident of Monson, and his principal business interests were identified with that place. He was the son of Colonel Alfred Lyon, of Brimfield, one of the leading citizens of that town, and was the youngest of a family of eleven children. His early education was principally obtained in the schools of his native place. At sixteen years of age he removed to Monson and began his business life there as a clerk in the store of Norcross & Co. In 1824 he formed a partnership with Joel Norcross and Charles P. Fay, of Monson, and with John Wyles, of Brimfield, his brother-in-law, and they purchased the mill and water-privilege in Monson Centre, then owned by a corporation known as the Monson Woollen Manufacturing Company. This concern had originally made broadcloth in a small way, and had subsequently become merged in the Hampden Company, of Monson, which was engaged in manufacturing cotton goods. The Monson Woollen Manufacturing Company, after Mr. Lyon entered it, at once began the manufacture of satinets and continued in business until 1870. Mr. Fay soon withdrew from the concern, and Mr. Norcross withdrew about 1835. Messrs. Wyles and Lyon continued the business as sole owners, with Mr. Lyon as the resident partner and business manager. Under Mr. Lyon's direction the company prospered notably, and especially so after 1860. Mr. Lyon very early exhibited those qualities which principally contribute to success in any line of business. He was strikingly industrious; he himself mastered the duties he exacted of employees, and there was no step in the process of manufacture that he did not himself learn and practice to the degree of perfect familiarity. Naturally conservative in temperament, he was sagacious in judgment, and when it was once formed he seldom needed to revise it. He had always unshaken courage in his own convictions. His employees found him exact, but just; and they never needed to strike, nor did they ever fail to receive the reward of their labor. It seems to have been the general verdict of those who knew him thoroughly that he had no superior as a business man in western Massachusetts.

Though his personal attention was largely given to the management of his manufacturing business, yet from the time of the establishment of the Monson Bank, in 1856, he was its managing director, and, practically, its president. The title, however, was held, at Mr. Lyon's request, by his brother-in-law, Mr. Wyles. Mr. Lyon was also a director, for a considerable number of years, in the Agawam Bank of Springfield, and the Chicopee Bank of the same place. His reputation as a financier was marked and well earned.

Prior to 1850 he represented his town in the state legislature for a single term, but he had no special taste for politics. He was a man of progressive ideas, and in town affairs he was always ready to do his part to further the public interests of the community in which he lived. He was never ostentatious in his beneficence, but

worthy objects found generous support from him. Monson Academy is a notable instance of this. He constantly aided it pecuniarily, and he was one of its trustees many years. The Congregational Church of Monson always received his liberal support, and he gave \$10,000 to it, toward the building of its new church edifice.

Mr. Lyon was universally respected as a man of high character and sound judgment. Probably no citizen of the town ever contributed more than he did to the prosperity of that community.

Mr. Lyon's first wife was Harriet Utley. His second wife was Mrs. Nancy M. Perkins, widow of Thaddeus Perkins, of Boston. By her he had two children. The elder, Carrie Reed Lyon, was born in Monson, May 22, 1855. She married Chalmers Dale, of New York, and died February 7, 1882, leaving a son, Chalmers Dale, Jr., the only lineal descendant of Mr. Lyon. Mr. Lyon's second child, Delia W., died unmarried May 30, 1875.

After the death of Mr. Lyon, his daughter, Mrs. Dale, erected in Monson a beautiful and substantial library, as a memorial to her father. This structure is of granite, and, architecturally, is strikingly effective. It cost, with its site, \$30,000. For the maintenance of this library, Mr. Lyon's widow established a permanent endowment fund of \$20,000. This library, thus endowed, has been wisely administered; and the facilities which it furnishes have always received marked appreciation from the community in which it is located. It is an ornament to the town, and a fitting memorial both to its donors and the respected citizen it commemorates. The main hall of the library is graced by an extraordinarily life-like portrait of Mr. Lyon, painted by the artist Thomas W. Wood, and suitable tablets within the library declare its memorial character.

JOSEPH LANGFORD REYNOLDS.

THE subject of this sketch was descended from William Reynolds, who, with two brothers, Christopher and John, went from England to Bermuda in the early part of the seventeenth century. William came to New England in 1637 and settled in that part of North Kingston in Rhode Island, which is now Wickford. He was one of thirty-nine residents in the Providence Plantations, who, on the 27th of July, 1640, signed an agreement to form a government for the colony. James Reynolds, a son of William, had a son, Joseph, who was born in Rhode Island in 1652. Joseph Reynolds had a son, John, and a grandson, John, Jr., who was the grandfather of the subject of this sketch. Elbridge Reynolds, son of John, Jr., and father of Joseph Langford Reynolds, was a farmer in Wickford, and occupied a farm which descended to him from his father and which is still owned by his descendants. He had seven children, John, Henry, Joseph L., Sarah, Martha L., Mary G. and Sheffield C.

Joseph Langford Reynolds was born on the old family farm in Wickford in the last hour of the year 1796. Until fourteen years of age he attended the public schools of his native town, and in 1811, at the age of fifteen, entered the employ of a farmer in Portsmouth, R. I., and remained with him one year. From Portsmouth he went to Coventry, R. I., to learn the trade of a machinist. Having partially learned his trade, he completed it during a three years' apprenticeship with Hinds, Arnold & Co. in that place.

His next employment was in Bozrah, Conn., where he was engaged a short time in the work of making brass andirons, and afterwards was employed three years by



Joseph L. Reynolds

Eli Whitney, the inventor of the Cotton Gin, at his factory in Whitneyville, Conn., in making muskets for the United States Government. From Whitneyville he returned to Rhode Island and spent one year in machine-making in Pawtucket. In 1820 he removed to Brimfield, Mass., where he was put in charge of the newly-invented power-looms of a factory engaged in the manufacture of cotton sheetings.

In 1821 Mr. Reynolds, having become, as a result of a varied experience, a master of machinery in its application to different processes of manufacture, was employed by the Hampden Cotton Manufacturing Company as general overseer of their mill in Monson, Mass. In 1825 he was made the agent of the company, and continued to serve in that capacity until 1850. During his term of service he made considerable additions to the plant of the company, and important improvements in its methods and processes of manufacture. Upon his resignation of the agency in 1850, the company presented him with a silver pitcher with an inscription declaring that it was "Presented to Joseph Langford Reynolds by the Hampden Manufacturing Company as a token of their sense of the skill, ability and integrity evinced by him in the management of their affairs for a quarter of a century." During his connection with the company he had acquired a partial ownership, and, notwithstanding his resignation as agent, he retained the office of treasurer, which he had held for some years.

After leaving the Hampden Company, he built two mills in South Monson on a branch of Chicopee Brook, and engaged on his own account in the manufacture of satinets. One of these mills was burned in June, 1858, and the privilege remained unimproved until 1884, when a mill for the manufacture of straw hats for men was built, which went into operation about the time of the death of Mr. Reynolds, which occurred June 9, 1885. This mill, owned by the two sons of Mr. Reynolds, Rice M. and Theodore, is under the immediate management of Rice M., the older son. The other mill, built by Mr. Reynolds and called the Rockland Mill, was also burned at a later date, and another called the "New Mill" was built on its site.

On the dissolution of the Hampden Manufacturing Company, Mr. Reynolds bought their north mill, and this mill, together with the "New Mill," are owned at the present time by Rice M. and Theodore Reynolds, who are engaged in the manufacture of ladies' dress goods and cloakings. The two mills employ about two hundred hands, and their product is sold by a commission house in New York.

Mr. Reynolds married, July 13, 1824, Sylvia, daughter of William Smith, of Brimfield, Mass., who died August 9, 1836. He married, March 8, 1837, for his second wife, Oriol, daughter of Rice and Lavinia (Shaw) Munn, of Monson, who died July 15, 1891. The children by the second marriage were Rice Munn, born December 18, 1838; Theodore, born October 31, 1843, and a third who died in infancy.

The honors and emoluments of public station offered few attractions to a man like Mr. Reynolds, brought up as he was to a business career and ardently devoted to the faithful discharge of its obligations and responsibilities. A participation in the management of town affairs he, however, recognized as the duty of every citizen, and he was repeatedly called by his fellow-citizens to the chairmanship of the Board of Selectmen. He was also, in 1854, a member of the State Senate, but only to this extent did he yield to the blandishments of office. In the Congregational church of Monson he was always interested, and as a Mason he was prominent in the ranks of the fraternity. He was at one time Master of the Thomas Lodge of Monson, and the first Master of the same Lodge after its removal to Palmer. He was also the first Master of the Dayspring Lodge of Monson.

The two sons of Mr. Reynolds inherit not only the business skill and executive

ability of their father, but also the prominent position held by him in the community. Rice M., the older, has held various town offices as well as the office for two terms of Representative to the General Court, and is now president of the Monson National Bank. Theodore is a director in the Monson National Bank, and both are prominent in the ranks of Masonry. Theodore, who has never been married, lives in the house which his father built in 1845, and in which he died, and his bookshelves are filled with costly copies of ancient works, some of which are unique and all of which are rare. His collection of early illuminated parchments and ancient Bibles, among which may be mentioned copies of the Matthew Bible of 1549, the Breeches Bible of 1592 and the Baskerville Bible of a later date, is especially interesting. It is fortunate indeed that a taste so cultivated as that of Mr. Reynolds should not be wanting in means for its gratification.

EDWARD CARRINGTON THAYER.

JOSEPH THAYER, the son of John Thayer, a prominent citizen of the town of Douglas, Mass., was born in Douglas in 1792. He graduated at Brown University in 1815. Afterwards he studied law with Hon. Levi Lincoln, of Worcester, and with Bezaleel Taft, Jr., of Uxbridge, Mass., and was admitted to the bar in Worcester in the year 1818.

He married Chloe Taft, the daughter of Hon. Bezaleel Taft, and settled in Uxbridge. Although eminent at the bar, he employed his ability and energies largely outside of his profession. He was one of the chief projectors of the Blackstone Canal, and the Providence and Worcester Railroad, and was at various times a member of the Massachusetts General Court, and also a member of the Constitutional Convention of 1853. He died at Worcester in the year 1872.

Edward Carrington Thayer, son of Joseph and Chloe (Taft) Thayer, was born in Uxbridge, Mass., May 10, 1830. He was educated in the public schools of his native town, at the Uxbridge and Leicester Academies, and at the boarding-school of Daniel Day at Lanesboro, Mass. At the age of seventeen he entered as clerk in the office of Welcome Farnum, an extensive woollen manufacturer in Waterford, Mass., and remained with him nearly five years. After leaving Waterford he returned to his Uxbridge home, where he remained several years on account of his father's ill health and to assist him in his business. During this period, he was also engaged in several manufacturing enterprises in Worcester and Millbury. In the year 1871 he went to Ashuelot, N. H., and leased the Ashuelot Woollen Mill, which had been idle several years. In 1873 Mr. Thayer, with two others, purchased the Ashuelot Mill, also the mill known as the Turner Mill, with all the water-power, lands and houses belonging, and commenced the manufacture of overcoatings and cloakings. After a few years, Mr. Thayer purchased the interests of his associates, and under his skillful management the production of both mills was increased to forty thousand broad yards per month. The mills were enlarged, the machinery doubled, and it has since furnished direct employment to three hundred and fifty people, who, together with their families, constitute a large proportion of the inhabitants of the village of Ashuelot, the welfare of which, under the fostering care of the proprietor of the mills, has come to be well and favorably known, and his helpful influence and assistance rendered in various ways, both in the past years and at the present time, are truly appreciated by his employees. Although doing business in the Ashuelot Valley for the past twenty-five years, Mr. Thayer's residence has been in Keene, N. H. He



Edw. C. Thayer

married in Winchester, N. H., July 22, 1873, Julia Beatrice, daughter of David and Fanny (Capron) Ball, and purchasing the estate in Keene known as the Sumner Wheeler Place, has since that time made it his home.

As a citizen of Keene Mr. Thayer has borne his share in the administration of local affairs, and has served at various times in both branches of the city government. Soon after settling in Keene he became largely interested in the Cheshire Railroad, was its vice-president, and very active in its management, until its consolidation with the Fitchburg Road in 1890. He is now a director in the Fitchburg Railroad, also the Norwich and Worcester, and a large owner in other New England roads, notably the Providence and Worcester, and the Boston, Concord and Montreal Railroads. Mr. Thayer was chosen director in the Winchester National Bank in 1873, and upon the death of Hon. William Haile, in 1876, he became president, which position he still holds. For several years he was president of the Cheshire Provident Institution for Savings, in Keene, and is now a director in the Citizens' National Bank. He is also a large stockholder in several prominent industrial corporations, among which are the Washburn and Moen Manufacturing Company, of Worcester, Mass., the Berkshire Cotton Manufacturing Company, and the Greylock Mills Company, of Adams, Mass.

Mr. Thayer, like his father and grandfather before him, is a conservative Unitarian, and while greatly interested in sustaining and promoting the prosperity and usefulness of the church and association, yet his views are broad and liberal towards other denominations; the young men of the Young Men's Christian Association have always found in him a staunch friend and an efficient helper. There is no more interesting trait in the character of Mr. Thayer, aside from those associated with his home, than his love for the town of his birth and the deep interest he feels in its welfare. He has recently erected, under his own supervision, a very handsome library building, in memory of his father and mother, presenting to the town, also, an additional fund, the income of which is to be used for books. This institution is now in beneficent operation, under the management of the town, and is gratefully recognized as a valuable educator of its people. The portraits of his father and grandfather, with about twenty of their contemporaries, adorn the walls of the Library Building. Mr. Thayer's home in Uxbridge, where he spends a portion of each summer, is one of the old landmarks of the town. The house was built in colonial style, and is surrounded by beautiful old elms. The homestead has long been the pride of his ancestors. The house, although built over one hundred years ago, is in a good state of preservation, and, like the Thayer mansion in Keene, is noticeable for its many interesting antiquities.

Mr. Thayer is true to his convictions and fearless in their expression. He is always just in his dealings with other men; he is also generous, both in word and in deed. In closing this sketch it is fitting to say that it is by no means a small tribute to the ability, good judgment, and, above all, the impregnable integrity of Mr. Thayer, that he was chosen one of the trustees of the large estate of Ephraim Murdock, amounting to nearly a million of dollars, which is now devoted to educational and religious purposes.

JOSEPH G. RAY.

JOSEPH G. RAY, son of Joseph and Lydia (Paine) Ray, was born in South Mendon, now East Blackstone, Mass., October 4, 1831. The necessities of his father's family, whose resources had been impaired by business reverses, demanded of him in his early boyhood all the assistance he could render for their relief. His education, therefore, was limited to the primary schools of his native town, to the public schools of Nashua, N. H., which, at the age of twelve, he attended one year, and to the public schools of Walpole, N. H., which, in his fifteenth year, he also attended one year. In 1839, at the age of eight years, while his brother, James P. Ray, was engaged in the manufacture of batting and wicking and cotton twine in Unionville, a part of Franklin, Mass., he entered his mill, and in light work spent such time morning and evening as could be spared from school, and from service aiding his father at home. The remuneration obtained from his labor enabled him to attend the Nashua schools, and his continued service in the mill during his vacations furnished him with means to secure farther instruction in the schools of Walpole. In 1850, at the age of nineteen, having mastered the methods of manufacture, he was employed by his brothers, composing the firm of J. P. & F. B. Ray, at a salary of four hundred and fifty dollars per annum, and during the first year in their service started the first rag-picker, and manufactured the first shoddy in New England.

In 1851 he was admitted to membership in the firm, which took the name of Ray Brothers. From that period he was associated with his brother, James P. Ray, until the death of the latter, in all the enterprises with which, as a manufacturer, he was connected; and at the time of writing he is treasurer and general manager of their two largest corporations, the Ray Woollen Company and the City Mills Company.

Mr. Ray resided in East Blackstone until 1861, and for several years was assessor and chairman of the selectmen of the town. In 1859, at the age of twenty-eight, he represented Blackstone in the Massachusetts House of Representatives, and in 1869 was chosen State Senator for the Norfolk County District, in which he resided. He was also a delegate to the National Republican Convention held in Chicago in 1884, representing the Ninth Congressional District of Massachusetts. Taking an active interest in the success of the Republican party, he has served for several years as chairman of the Franklin Town Committee. In 1870 he built a house in Franklin, and is still a resident there, not only engaged in his extensive business, but zealously participating in every movement looking to the welfare of his fellow-citizens and the town. To him, as the executor of the bequests of Dr. Oliver Dean, the Universalist Society of Franklin, and the whole community, are indebted for the successful completion of the Universalist Church, and of the Dean Academy, an institution which, with its stately edifice and complete equipment, is an important auxiliary in the cause of education, and a splendid memorial of its benefactor. Besides being treasurer and manager of the manufacturing corporations above mentioned controlled by the firm of which he is a member, having been an incorporator, he is director and treasurer of the Rhode Island and Massachusetts Railroad, of the Milford, Franklin and Providence Railroad Company, and of the Woonsocket and Pascoag Railroad. With generous liberality he has always been ready with open hand to extend needed aid to every project calculated to develop and promote the welfare



Wm. G. Story



James P. Hays

of the people among whom he has cast his lot. He is president of the Franklin Library Association, of the Franklin Water Works, and, since the death of his brother James, has been chosen to succeed him as president of the Franklin National Bank. This bank was formerly located in Blackstone, and known as the Worcester County National Bank, but, through the efforts of Mr. Ray, a Congressional Act was passed permitting its removal to Franklin, and the adoption of its present name, with the consent of three-fourths of its stockholders. Consent having been secured, the bank was moved and re-named in 1872, and the benefit accruing from it to the town has made the act of Mr. Ray a public benefaction.

His career, with its groundwork of a limited education in the schools, and with its successful development and growth, teaches a lesson to short-sighted legislators, who forget that, in manual labor and in the mill, an instruction may be secured which is often an essential complement to that obtained from the curriculum of our educational system.

Mr. Ray married, in 1854, Emily, daughter of Col. Joseph and Annie Rockwood, of Bellingham, Mass. Of this union there are two children, Lydia Paine and Annie Rockwood, the latter being the wife of Adelbert D. Thayer, of Franklin.

JAMES PAINE RAY.

JAMES PAINE RAY was born in South Mendon, Mass., August 1, 1820, and was the son of Joseph and Lydia (Paine) Ray. His father, Joseph Ray, was born in West Wrentham, Mass., July 24, 1791, and, after learning the stonemason's trade, removed to South Mendon, now East Blackstone, in 1813. He was engaged some years in building mills in the Blackstone valley, and gained a high reputation for fidelity and thoroughness in his work. The mother of the subject of this sketch was a daughter of James Paine, an iron-worker by trade, who removed to Mendon from Smithfield, R. I., her native place. In 1821 Joseph Ray formed a partnership with James Paine, his father-in-law, under the firm-name of Paine & Ray, and became extensively engaged in the manufacture of cotton and woollen machinery. He died December 8, 1847. James Paine Ray, his oldest son, was educated in the public schools of Bellingham and Uxbridge, Mass., and at the Manual Labor School in Worcester. At the age of fifteen he had acquired such an education as to enable him to secure a position as teacher in a district school in Northbridge, Mass., which position he filled with entire satisfaction to the committee in charge. Not long after he became a clerk in a store, first in Woonsocket, R. I., and afterwards in Upton, Mass., but in 1836 he entered a cotton factory in South Mendon, remaining one year in the position of card-stripper. In 1837, at the age of seventeen, with a capital of \$7, he hired two carding machines in the city mills, now in the town of Norfolk, with sufficient power to run them, and buying two hundred pounds of cotton waste began the manufacture of cotton batting. He peddled out the product of his enterprise, and by the strictest attention to business, the most thorough economy and an irresistible determination to succeed, he was able after one year's experience to buy six carding machines and pursue his carding business to better advantage and with increasing profit. In 1838 he bought a spinning-mule, and during the winter occupied his time in the manufacture of cotton wicking. The panic of 1837, however, threw a gloom over the business in which he was engaged, and the depression of prices brought about a reversal, from which he was only by the

greatest perseverance and energy able to extricate himself. He soon after hired a new mill in Unionville, a part of Franklin, Mass., owned by Joseph Whiting, and moved to that place in May, 1839, for the purpose of engaging more extensively in the manufacture of batting and wicking, and also of cotton twine. In 1844 he had accumulated about \$2000, but the failure of the commission house in Boston through which his sales were made, caused a temporary embarrassment, which through the leniency of his creditors he was able to overcome. He was granted an extension of time on his liabilities, the last of which he liquidated in 1847.

The slender foundation on which his business career was laid, and the repeated obstacles in the way of his advancement, which would have discouraged a man of less courage, served only to stimulate his zeal and give strength and fibre to his work. In 1844 his brother, Frank Bailis Ray, three years younger than himself, became his partner under the firm name of J. P. & F. B. Ray, and the new firm bought the Makepeace Mill, in Unionville, and there carried on their business, with the addition of making bagging, until 1851, when the firm, after the admission of his brother, Joseph G. Ray, became Ray Brothers. In 1856 the mill owned by the firm in South Mendon was burned and immediately rebuilt. In 1858 the erection of a mill by Edward Harris, in the north part of Woonsocket, caused them so much injury by back water that they closed their factory in South Mendon and removed its machinery to the Unionville Mill. In 1860 Frank B. Ray retired from the firm, which continued business under the name of J. P. & J. G. Ray. James Paine Ray not long after purchased the Bartlett Mill, in Woonsocket, and manufactured cotton sheetings. In 1873 the firm of J. P. & J. G. Ray became associated with Oscar J. Rathburn, president of the Harris Woollen Company, under the firm-name of Rays, Rathburn & Co., and operated the Jenckesville Mill, in Woonsocket, until it was sold to Edward Rathburn.

Before the formation of the firm of Rays, Rathburn & Co., the firm of J. P. and J. G. Ray bought, in 1865, the mill in North Bellingham, which their father had built, and manufactured satinets. They built also a mill in Franklin, in 1870, which was used for the manufacture of shoddy. In 1872 the firm of Rathburn & Mackensie was formed, consisting of James Paine and Joseph G. Ray, Oscar J. Rathburn and Charles J. Mackensie, and built a mill in Franklin for the manufacture of feltings. In 1874 J. P. and J. G. Ray bought an interest in the Franklin Felting Company, and reorganized it as the Franklin Woollen Company. In 1877 they built another mill in Franklin for the manufacture of fancy cassimeres, and the year previous they bought of the Putnam Manufacturing Company, at Putnam, Conn., a mill originally built by Hosea Ballou, of Woonsocket, and also bought the City Mills, in Norfolk. During the long and prosperous career of the firm, which included the Ray Brothers in its membership, they have successfully manufactured batting, wicking, twine, bagging and finished cloths in cottons, satinets and fancy cassimeres in woollens. The business of the various firms of J. P. and J. G. Ray, and Rays, Rathburn & Mackensie, and of the various corporations with which they have been connected, is still carried on with success. In 1870 Edgar K. Ray, son of James P. Ray, was admitted a member of both of the above firms, and is now treasurer of the Putnam Manufacturing Company and the vice-president and active manager of the mills in Woonsocket. Upon his shoulders the labor and responsibilities of his father have chiefly fallen, and are discharged by him with sagacity, prudence and skill.

The following mills are now operated by the firm and by corporations under their control: The Lyman, Bartlett and Ballou Mills, manufacturing sheetings in Woonsocket; the City Mills, in Norfolk, manufacturing feltings; the Franklin Mill,



Christopher Gleason,

manufacturing cassimeres ; the North Bellingham Mill, manufacturing satinets ; the Unionville Mill, manufacturing twine, bagging, toweling, etc. ; the Medway Mill, manufacturing wadding, batting and buckram, and the mill of the Putnam Manufacturing Company. Mr. Ray moved to Franklin in 1871, having lived seven years or more previously in Woonsocket. During his residence in Franklin he was state senator two years and representative one year, and for some years chairman of the Board of Selectmen. In the latter capacity he served during the war, and was both efficient in his loyal service to the town, and liberal towards the soldiers and those of their families needing aid. He was an active member of the Republican party, a trusted servant of the Universalist church, to which he belonged, and of the community among whom he made his home. He was an incorporator and director in the Franklin Rubber Company, president of the Putnam Manufacturing Company, president of several corporations in Woonsocket, and president of the Milford, Franklin and Providence railroad, the construction of which was due to his efforts. He was also the projector and efficient promoter of the construction of the Rhode Island and Massachusetts railroad and the Woonsocket and Pascoag railroad.

Mr. Ray married May 31, 1843, Susan K., daughter of Capt. Alfred Knapp, of Franklin, and died in that town August 17, 1894.



CHRISTOPHER GLENNON.

MICHAEL GLENNON, who was born in Westmeath, Ireland, in 1778, married Jane Casey of that town and had two sons and two daughters, James, Christopher, Mary and Esther. He came to New England in 1838 with his whole family and settled in Pittsfield, Mass., where he died in 1854. Christopher Glennon, his second son, was born in Westmeath in March, 1823, and received such an education as the schools of that town could furnish. On his arrival at Pittsfield in 1838, at the age of fifteen years, he worked for a time in the Pomeroy Cassimere Factory, and afterwards became master-mechanic in that establishment, which position he held until 1862. In that year he associated himself with William J. Hawkins, and until 1865 was engaged in the manufacture of Balmoral skirts in Pittsfield. In that year he bought with Mr. Hawkins a water privilege in Dalton on the east branch of the Housatonic River, which had been the property of Franklin Weston, and on which an old custom carding mill had stood, and an old iron furnace, in which the first stoves were cast west of the Connecticut river. On this privilege, Messrs. Glennon and Hawkins built a two-set mill for the manufacture of fancy cassimeres. Mr. Hawkins died in 1878, and from that time until the retirement of Mr. Glennon from active business in 1894, his son, Michael Glennon, was associated with him as a partner. Since 1894 the mill has been managed by Michael, associated with Joseph Bickerton, of New York. The capacity of the mill since it began operations has been increased from two sets to ten, and, with the employment of about one hundred and fifty hands, it turns out a product valued at \$275,000. The goods manufactured are sold from the headquarters of the concern in New York on orders, and find their market through New England and the West.

Though possessing a limited general education, Mr. Glennon received a thorough training in that special industry, to which he devoted his life. Like many other successful men, he saw more clearly the needs, and overcame more easily the difficulties of his calling in the absence of those distracting influences, which are often the result of our educational methods, as the astronomer extends his vision by con-

fining it to the limited telescope tube. He brought, however, to his business not only his thorough training, but also good common sense, sound judgment, economical methods and an undoubted integrity, which were universally recognized by his fellow-citizens, and often called into their service. The excellent system of water-works in Dalton established in 1884 owes much for its successful consummation to his instrumentality. He was a member of the first board of water commissioners and served until 1889, when his son Michael, now a member, took his place. He has also served at various times as a member of the Boards of Selectmen and Assessors and as one of the Trustees of the Town Cemetery.

Mr. Glennon married, in 1850, Marcella Conlon, of Pittsfield, and has had four children: Rose, deceased; Mary, unmarried; Michael, and John. He is living in Dalton, enjoying a serene old age, strong in body and active in mind, contented in his retirement from the cares and responsibilities which through a long life he has faithfully discharged.



SILAS MANDEVILLE WHEELOCK.

RALPH WHEELOCK, the first American ancestor of Mr. S. M. Wheelock, was born in Shropshire, England, in 1600, and was educated at Clare Hall, Cambridge. He became a Puritan preacher, and, driven before the wave of persecution which swept over England, came to New England in 1637, and settled temporarily in Watertown. After a year's residence in that town, he removed to Dedham, an infant town, settled two years before, and was active in the formation of the Dedham Church. He was a founder of the town of Medfield, set off from Dedham in 1650, and died in that town January 11, 1684.

Simeon Wheelock, the fifth in descent from Ralph Wheelock, was born in Mendon, Mass., in 1741. He was an orderly at Crown Point, in 1760, under Col. Christopher Harris, of a Rhode Island regiment, and removed to Uxbridge in 1763. He was a blacksmith by trade, and town clerk of Uxbridge from 1773 to 1777. He was a soldier during the Revolution, and took an active part in the suppression of Shays' Rebellion. He died in Springfield, Mass., in 1787, leaving a widow and eight children in somewhat straitened circumstances. He married, in 1763, Deborah Thayer, and of his eight children Jerry was the youngest.

Jerry Wheelock, son of Simeon and Deborah (Thayer) Wheelock, was born in Uxbridge, Mass., September 19, 1784. His want of a school education was, in a large degree, made up by instruction received from his mother, who was a woman of unusual intelligence and force of character. At an early age he was put out to learn the trade of a "set workman," a maker of pails and tubs by hand. Afterwards at various times he worked at the trade of making bobbins and spools and that of chair-making. In 1811 Daniel Day completed the construction and equipment of a woollen mill in Uxbridge, and Mr. Wheelock became a partner in the manufacturing firm of Daniel Day & Co. After a few years he entered the employ of Artemas Dryden, Jr., of Holden, Mass., a builder of wool-carding machines, and in 1814 became a member of an association afterwards incorporated as the "Rivulet Manufacturing Company." He was made mechanical manager and superintendent of the mill of this company and continued in office until 1818, when he went into business on his own account in Uxbridge, manufacturing machinery, and continued in that business until 1833. In that year he formed a partnership with his son, Charles A. Wheelock, under the firm-name of Jerry Wheelock & Son, in the business of manu-



J. M. Wheeler

facturing woollens. In 1840 Silas M. Wheelock was admitted to the firm, and the partnership continued until 1846, when he retired from active business. He married, January 24, 1811, Sukey Day, daughter of Daniel and Sylvia (Wheelock) Day, and died in Uxbridge, October 10, 1861.

Silas Mandeville Wheelock, son of Jerry and Sukey (Day) Wheelock, was born in Uxbridge, November 11, 1817. In his youth he attended the district school, kept by a male teacher ten weeks in the winter, and by a female teacher ten weeks in the summer, and at a later time private schools taught by E. Porter Dyer and by C. C. Jewett, afterwards librarian of the Boston Public Library and of the Smithsonian Institute. At nine years of age he began piecing rolls in the mill of Luke Taft on West river in Uxbridge, and afterwards, until 1840, worked in various other mills, among which was that of Jerry Wheelock & Co., a firm of which his father and brothers were members, who had in 1840 bought one-half of the Taft Mill. In 1846, at which time his father retired from business, he became associated with his brother under the firm-name of C. A. & S. M. Wheelock, and, buying the other half of the Taft Mill, entered into the manufacture of satinets, plaid linseys and tweeds, which was continued until 1853. In that year the manufacture of the above articles was abandoned, and with an enlarged mill, equipped with steam-power, the manufacture of fancy cassimeres was begun. Mr. S. M. Wheelock was made general manager, and has continued in the pursuit of a successful career as manufacturer up to the present time. From 1861 to 1867, without any interruption in the operations of the firm of which he was a member, he was connected with the woollen department of the commission houses of Tucker, Newton & Co., and others in New York and Boston, his services having been sought as those of a man of marked business capacity and a high reputation with the trade.

In 1870 Mr. Wheelock with others bought the property of the Harris Woollen Company, in Putnam, Conn., consisting of a factory of twelve sets of woollen machinery, tenement houses, and one quarter of the Quinnebaug River at that point, and organized as a corporation the Putnam Woollen Company. In 1880 the capital stock of the Company was increased, and a second factory, with another quarter of the Quinnebaug property, was bought. Mr. Wheelock was the general manager and treasurer of this company until 1887, when, owing to a multiplicity of business operations, he resigned and his son, Eugene A. Wheelock, took his place as treasurer. Isaac Fenno, of Boston, is president of this company.

In 1883 he bought of R. and J. Taft the property of the Central Mill, in Uxbridge, consisting of a factory with machinery and power, houses and the whole of the Blackstone River at that point. With this property he organized the Calumet Woollen Company, of which he became treasurer, and he is still in active and successful service in the manufacture of fancy cassimeres. Isaac Fenno, of Boston, is also president of this company, and Arthur Wheelock, son of Mr. Wheelock, is agent and manager.

In 1886 Mr. Wheelock bought of William D. Davis, of Providence, the property of the Uxbridge Woollen Company, about a half a mile east of the Calumet Mill, consisting of a factory, machinery, power, dwelling-houses, and the whole of the Blackstone River at that point, and under the name of the Hecla Mill it was added to the property of the Calumet Woollen Company, the capital of that company having been increased for the purpose. The two mills of the company employ about three hundred hands.

Besides the above mills, which are the property of a company in which Mr. Wheelock is a large owner, the firm owns and carried on until 1890 the Wacantuck

Mill, on West River, in the town of Uxbridge. This mill, built by Luke Taft in 1825, and rebuilt in 1838, was sold, one-half in 1840 to Jerry Wheelock & Son, and the other half in 1846 to C. A. and S. M. Wheelock. This mill was leased for five years, and since the termination of its lease in 1895 has been closed. Mr. Wheelock gives his whole time to the management of the mills of the Calumet Woollen Company, and, though both mills are in operation with diminished profits under the present tariff, it is confidently believed that a reasonably increased protection will reëstablish their former prosperity and enable Mr. Wheelock also to reopen the Wacantuck Mill.

A life-long resident of Uxbridge, Mr. Wheelock enjoys the esteem and confidence of his fellow-citizens. He served a number of years on the Board of Selectmen, and at various times on committees entrusted with the consideration of important questions and measures involving the welfare of the town. He has been for about thirty years a director in the Blackstone National Bank of Uxbridge. In 1888 and 1889 he was a member of the State Senate from the Second Worcester District, and in both years was a member of the Committee on Manufactures, and that on Parishes and Religious Societies. A Republican in politics, the honors of his party have for many years been within his reach, had he felt any ambition or desire to pluck them. Brought up, however, and thoroughly trained in the paths of business, he has never been allured from them by the false lights which so often involve the hitherto successful business man in eventual ruin. At the age of seventy-nine he may well feel that the days of political temptation have gone by; and with the past secure it may be safe to pronounce upon him, after a long life of industry, integrity and honor, the benediction of—Well done, good and faithful servant; the esteem and love of the community in which you have lived are your reward.

The religious associations of Mr. Wheelock are with the Unitarian Society of Uxbridge, to the support of which he is a liberal contributor.

Mr. Wheelock married, May 5, 1841, Irene, daughter of Luke and Nancy (Wood) Taft, of Uxbridge, and has had five children, of whom only two are living, Eugene A., the treasurer of the Putnam Woollen (Manufacturing) Company, and Arthur, the agent and manager of the Calumet Woollen Company.

WALTER AIKEN.

THE manufacturing industries of New England and the inventive genius of her sons have caused this locality to take a prominent position among the manufacturing sections of the world, and probably no man in New Hampshire contributed more prominently to this result than Walter Aiken, the subject of this sketch. He was born in Dracut, Mass., October 5, 1831. His father, Herrick Aiken, was a manufacturer of machinery at Dracut, but removed to Franklin in 1838, where he carried on business for many years and gained a wide reputation as an inventor. Walter Aiken's early education was acquired at the common schools, and he subsequently passed two years at the Gilmanton Academy and the Institutes of New Hampton and Tilton. Having a natural talent for mechanics, he entered his father's machine shop, where his inventive genius rapidly took form, and here he invented and built one of the first knitting machines in this country. He was a pioneer in this manufacture and took out over forty patents on knitting machines and made himself known throughout the civilized world. He also became a large



Walter Aiken

hosiery manufacturer and was proprietor of the large industry at Franklin Falls, which has long been a representative institution of New Hampshire.

An achievement, however, which brought his name prominently before the people of this country, was the construction of a railroad to the top of Mount Washington. While this plan was probably conceived by his father, Herrick Aiken, its consummation and practical operation were left for him, and with his usual ability, tireless energy and indomitable will, he undertook this step, and in the face of countless discouragements and the opposition generally of the people, he built the road, constructed and built the locomotives in use, and in 1869 the road was completed, and Mr. Aiken became the practical owner and general manager of the undertaking, which proved a great financial success. He was by natural instinct an inventor and knew the value of mechanical forces and was successful according to his skill and special knowledge. He not only made the Washington Railroad famous throughout the world and also built up the manufacturing industries to a large proportion at Franklin Falls, but his ability also found scope in other fields, and he was proprietor of the Hotel Hamilton in Bermuda, an attractive and fashionable resort. He also built the Summit House on Mount Washington and was its principal owner.

Mr. Aiken was twice married, his first wife being Susan Colby, of Warner; and his second wife, Mary Dodge, of Hampton Falls.

While on a shooting trip in Maryland, he met with an accident which resulted in his death, December 12, 1893. His two sons, James and Fred Aiken, succeeded to his large interests; and the manufactory at Franklin Falls is now conducted successfully by them under the name of Walter Aiken's Sons. He was interested in everything tending to advance the interests of Franklin. He had been an officer in the banks, president of the Gas and Electric Light Company, and was prominent in various other business enterprises. He was a member of Merrimack Lodge, I.O.O.F., and Meriden Lodge of Masons. He was a Democrat in politics, and, although earnestly interested in the success of his party, he was not an active politician; but did, however, represent the town in several sessions of the state legislature. He was a commissioner from New Hampshire of the World's Columbian Exposition at Chicago in 1893. He also served in the War of the Rebellion.

Walter Aiken was a man of marked personality, exceptional strength and was remarkably successful, and in many respects towered above any other of his time in New Hampshire, and made his way to fortune and reputation in fields which others dared not enter. He was thoroughly independent and self-reliant. He was a generous giver, and the stream of benevolence flowed quietly, steadily and refreshingly. He was an ardent sportsman, and few men did more to promote the fishing interests of New Hampshire. In all walks of life he exerted a strong influence. Prominent among his personal traits of character was his sound, discriminating judgment, his fearless and impartial discharge of official and private duty. He was a man of spotless integrity, of quick apprehension and accuracy, method and faithfulness in business; and these qualities made him an acknowledged leader in the community. He was gentle in manners, true in principle, earnest in his convictions, steadfast in his opinions, charitable, benevolent and kindly, without ostentation. He was beloved by his fellow-citizens, for he took an active interest in whatever concerned the welfare of the community, always doing his part cheerfully and generously. His sympathies were genuine, his love for his neighbor joined so closely with sincerity and earnestness in the performance of duty that he was constantly doing good and making others happy.

JOHN B. TALCOTT.

PROMINENTLY identified with the manufacturing interests of Connecticut, and justly regarded as one of New Britain's most esteemed and honored citizens, is the Hon. John B. Talcott, the subject of this sketch.

Mr. Talcott was born in Thompsonville (Enfield), Conn., September 14, 1824. His parents removed to West Hartford in 1828. He fitted for college in the Hartford Grammar School and graduated from Yale in 1846, the salutatorian of his class. Having decided to enter the legal profession, he entered the office of Francis Fellows in Hartford, where he began his preparation for the bar, at the same time hearing Latin recitations in the Hartford Female Seminary, and also performed the duties of clerk in the Probate Court. While thus engaged, he was appointed tutor to fill a vacancy for a year in Middlebury College, Vermont, after which he returned to Hartford, and was admitted to the bar. He was soon after appointed tutor in Greek at Yale College, and filled the position for three years, also continuing his law studies with the intention of engaging actively in the practice of his chosen profession. At this time, however, he was induced to change his plans, and accept an offer of Seth J. North to remove to New Britain, and engage in the manufacture of hooks and eyes, then a flourishing business. Here he brought the same energy to bear as had been manifest in his preparation for the bar, and at once became an active and prominent factor in manufacturing circles. He became a partner with Mr. North, and soon after interested in the manufacture of knit goods, and subsequently was president of the New Britain Knitting Company, which position he still holds. In 1868 he was largely instrumental in organizing the American Hosiery Company, and became its secretary and treasurer, and for several years has been president of this company.

All measures tending to advance the interests of New Britain have found in Mr. Talcott an able and earnest supporter. He is president of the Mechanics' National Bank, and a director in the P. & F. Corbin Co., Corbin Cabinet Lock Co., the Savings Bank of New Britain and the Connecticut General Life Insurance Company of Hartford. He is also vice-president of the Young Men's Christian Association, and has been president of the New Britain Institute continuously since 1882. He has been a deacon in the South Congregational Church continuously since 1884.

Notwithstanding his large and exacting business interests, Mr. Talcott has found time to devote himself to the public service, and has served his fellow-citizens in various official capacities. He was elected to the Common Council of New Britain in 1876, alderman in 1877 and 1879, and was mayor of the city in 1880 and 1881.

Mr. Talcott was married first to Jane Crosswell Goodwin in 1848, and again in 1880 to Fanny H. Hazen, and of his six children three are now living, a son, George S. Talcott, and two daughters, Florence H. and Helen H. Talcott.

The secret of Mr. Talcott's success is largely due to his tireless industry, to his remarkable personal attention to details, and to a probity and courage tempered with caution, which have made him sagacious and successful in a remarkable degree. He is a business man of the highest integrity and signal ability, rich in experience, large-hearted and faithful in all his relations. Such are the qualities which have placed Mr. Talcott in the proud position he occupies to-day among the citizens of Hartford County.



John B. Talbot



Heu. Folcott

HORACE W. AND CHARLES D. TALCOTT.

IN THE southwest corner of the town of Vernon, ten miles east of Hartford, on the line of the New England Railway, lies the village of Talcottville. Here a valuable water-power on the Tankeroosen, near its entry into the Hockanum, was brought into use early in the nineteenth century. John Warburton, a millwright by trade, came from England to America in 1792. Just ten years later, in company with Daniel Fuller, of Bolton, Conn., he purchased the privilege of which he became sole owner in 1804. From lack of means he progressed slowly in bringing it into use. Having at length put into operation two small mules and a woollen card on a separate fall about forty rods below, and built two brick houses, he sold the entire property in December, 1809, for \$10,200, to Irad Fuller, Lebbeus P. Tinker, Alexander McLean and Francis McLean, all of Vernon. They developed the enterprise to such a degree that just after the close of the second war with Great Britain, when the country was suffering from severe financial depression, Thomas Bull, of Hartford, in July, 1816, bought their entire interests for \$18,000. After operating the mill for five years, he sold to various parties 125-140ths of the plant. Henry Hudson, by purchases at different dates, became sole owner in January, 1833, when he in turn sold the property to the brothers George and Nathaniel Kellogg, for \$2500, George having bought the wool-carding mill in 1816. For the next twenty years the village was known as Kelloggsville. The purchasers put in new machinery and pushed the manufacture of satinets, with which they were already familiar.

In 1835 on the site of the old cotton factory a new mill, 90 by 34 feet, and three stories high, was built. Meanwhile Nathaniel O. Kellogg had become sole proprietor. He conducted the business with marked success till he passed away, May 13, 1854, in the fifty-ninth year of his age.

The executors of his estate now entrusted the management of the factory to the brothers Horace Wells Talcott and Charles Denison Talcott, who had been intimately associated with Mr. Kellogg for a number of years in the conduct of the enterprise. In July, 1856, they bought the property for \$20,000, formed the firm since known as Talcott Brothers and later changed the name of the village to Talcottville. With vigor, foresight and success the new owners continued to pursue the policy with which they had been identified as agents and employés. Little occurred for the next thirteen years to disturb the onward flow of prosperity. Then two calamities fell upon the enterprise in quick succession. September 20, 1869, the lower mill was burned to the ground, and on the 4th of the following month a destructive freshet having carried away a dam half a mile above, brought down a flood which also swept off the dam and a part of the mill at the upper privilege. The firm now rebuilt on a new location about midway between the former sites and so rearranged the trench as to use at this point the entire fall of twenty-one feet. The structure with subsequent additions consists of a central part, 160 by 34 feet, three stories high, flanked by two extensions of two stories each, one 80 and the other 90 feet in length, with a picker room of 40 feet, giving a total frontage of 370 feet. New machinery embracing the latest improvements was introduced at the same time. In the main the mill produces Union cassimeres and employs about one hundred hands.

Horace W. Talcott, born in Manchester, Conn., June 10, 1821, died June 16, 1871, having spent two-thirds of an eminently busy and useful life in the care and development of this property. The Connecticut family of the name, including the

Vernon branch, sprang from John, the emigrant ancestor, who came from England to Boston in 1632, and moved to Hartford in 1636, having the previous year sent forward a carpenter, Nicholas Clark, to build a house for him. This was the first house built in Hartford and stood on the corner where the church made famous by the preaching of Rev. Horace Bushnell, D.D., was afterwards erected. He was the grandfather of Joseph Talcott, governor of Connecticut from 1724 till 1741, and the first governor born on the soil of the colony. John, the emigrant, was deputy to the General Court continuously from its formation till 1654, when he was chosen assistant and also treasurer of the colony. Both in public and private affairs his descendants bore a conspicuous and honorable part during the colonial period and onward.

Entering the mill in April, 1838, Horace W. step by step acquired thorough mastery of all the details of the manufacturing department of which he had full charge several years before he became a purchaser.

Charles D., born in Manchester, Conn., September 11, 1823, survived his brother thirteen years, and died July 17, 1882. He entered the mill in 1850 and, after becoming familiar with the manufacturing department, was transferred to the office. From the death of Mr. Kellogg he had charge of the finances and correspondence. Epithets of praise or blame can be easily multiplied, and are often misplaced. These men may best be judged by what they did, for between them during life there existed close unity of sympathy and aim, and they left behind an influence for good which has broadened with the passing years.

In 1866, for the use of the village and vicinity, at a cost of over \$30,000, they built a brick church of the Congregational denomination. It seats easily about four hundred. Under the same roof are parlors for meetings of the ladies and an ample lecture-room. A part of the lower floor is used for the office of the company. In church and Sunday-school both brothers were ardent workers. In 1880 the firm built a brick school-house sufficiently large to meet all local needs, and sufficiently ornate to make it attractive. Charles D. projected a public library, but died before its completion. The firm, at its own expense, carried out the plan fully. Like the other buildings for general use, it is of brick, and designed to unite utility with artistic effects. Its shelves now contain about sixteen hundred volumes. Thus, out of a moderate business, the proprietors have from time to time erected at their exclusive expense, at a cost of about \$45,000, a church, a school-house and a library, and have given them to the public. By inheritance and conviction the brothers were Puritans, unsparing of themselves and uncompromising in the pursuit of what they believed to be a duty. It was their steadfast aim to make the little community a model of sobriety, thrift and sound morals. No intoxicants were allowed to be sold on the premises. Men whose habits or example were likely to prove injurious to others could not find employment here.

Horace W., who married Jane M. Gardener, October 9, 1842, left two children, Rosa Jane (now Mrs. Samuel A. Talcott) and Horace Gardener. Charles D. was twice married. By his second wife, H. Maria Freeman, of Mansfield, Conn., he left one son, also named Charles Denison, and still a minor.

With the exception of small legacies to collateral members of the family, the entire property is owned by the heirs of the two brothers. To the present representatives of the family have descended the firm-name, management, traditions and policy with few changes, except, perhaps, that the later generation has been more tolerant toward the frailties of the erring.

Horace Gardener Talcott, born in 1847, and educated at Andover, Mass., and Yale, came from college to the mill and succeeded his uncle as general manager in



E. D. Smith



Wm. H. H. H. H.

1882. Associated with him is his brother-in-law, Samuel A. Talcott, a descendant of John, the emigrant, through another line. A cousin, Morris H. Talcott, has special charge of the finances and accounts, while an uncle, Lyman P., youngest brother of Horace W. and Charles D., manages the farm of three hundred acres that belongs to the mills.

Like the fathers, the present managers are closely identified with the financial, educational and religious movements of the vicinity. As one of the fruits of local influences they have seen many boys and girls go out from the village to fill with credit important positions in a wider sphere.

On an eminence overlooking the village and the valley to the westward, Horace W. and Charles D. built two homes which in exact resemblance to each other typify the strong fraternal bonds which united them. Here dwell their families in an Arcadia of peace, plenty and happiness, near and yet remote from the turmoil of a world of strife.



WILLIAM JAMES HOGG.

THE first American ancestor of William James Hogg, the subject of this sketch, was William Hogg, a native of Scotland, who came to America late in the last century and settled in Northumberland county, Pennsylvania. He was extensively engaged in the linen manufacture in Scotland, but, after his arrival in America, was a man of wealth and leisure. His son was, like him, a staunch Scotch Presbyterian, and, after a liberal education, was early initiated in industrial pursuits. The son removed to Philadelphia when a young man and engaged in the manufacture of shawls and other woollen fabrics. At that time the manufacture of carpets was struggling to overcome the obstacles which have always been incident to our country in the infancy of important industries. In 1832 Mr. Hogg began to apply his energies to the development of this manufacture, and the founders of a number of the carpet establishments at the present day in Philadelphia learned their trade with him, and were employed by him in various capacities. After a successful career of fourteen years in this business, he retired in 1846 with abundant means as a reward of his persistency and courage. His son, William, succeeded him, and, in connection with his brother James, continued in the carpet manufacture until 1850, when the firm was dissolved, and he remained as the sole proprietor and manager of the business through many prosperous years. He was born in Philadelphia September 3, 1820, and died in that city June 8, 1883. His wife was Catherine L. Horner, whose father, Samuel Horner, was a calico print manufacturer, and whose two sons were also in the carpet business.

William James Hogg, the subject of this sketch, was the oldest son of William and Catherine L. (Horner) Hogg, and was born in Philadelphia, July 5, 1851. He was educated at Dr. Faires' School, in Philadelphia, and at Lafayette College, in Easton, Pa. In 1868 he began his business life with his father, who was still carrying on the carpet manufacture, and in 1871 became associated with him as a partner. In 1879, associated with his father, he bought the property of the Crompton Carpet Company, in Worcester, Mass., and since that time has made Worcester his place of residence. The old firm in Philadelphia continued until 1882, he retaining his interest, while his father managed the business. The new firm in Worcester bore the name of William James Hogg & Co., and Mr. William James Hogg was the manager. In 1882 he retired from the old firm, and, buying out the interest of his

father in the Worcester firm, became, as he has since been, the sole proprietor of its plant and the manager of its business. The name of the Crompton Carpet Company at the time of its purchase, in July, 1879, was changed to that, which it still bears, of the Worcester Carpet Company.

In 1883, the year after Mr. Hogg became the sole proprietor of the Worcester factory, he built a new mill, enlarging the capacity of the plant one-third, and in 1884 he added the factories of the Packachoag Worsted Mills, and engaged in spinning his own worsted yarns. The subsequent purchase in 1884 of the Stillwater Pond and Dam still further improved his facilities for manufacture, and still later his plant was again enlarged to meet the demands of an increasing business.

The product of the Worcester Carpet Company consists of Wilton and Brussels carpets and rugs of the finest grades. About four hundred hands are employed, and the sales of goods are made on orders secured by traveling salesmen, who report at the office of the company in New York.

In 1887 Mr. Hogg, in connection with Herbert L. Stockwell, bought the Stoneville Worsted Mills, in Auburn, Mass., and, refitting them with new machinery, engaged in the manufacture of worsted and woollen yarns, under the name of the Stoneville Worsted Company. This plant contains a large amount of land, superior water-power, and employs about one hundred and fifty hands.

Aside from his manufacturing interests, Mr. Hogg has been largely interested in real-estate in Philadelphia, and in South Worcester, where his carpet factory is situated, he has been a large purchaser of land, which he has improved by the laying out of streets and the erection of houses for lease or sale.

It can be readily seen that a man, cultivating so large a field of business activity, can have little desire for political office, or for any special participation in the management of political affairs. He is a firm Republican and an advocate of those protective policies which nursed the industry, to which he had devoted his life, in the years of its infancy. His other associations, outside of his business, are those which relate either to social life or those public services which no true citizen can refuse to render. He is a Mason of high rank, a member of the Piedmont Congregational Church, a director in the Quinsigamond National Bank and of the Worcester Board of Trade, and a trustee in the Worcester Five Cent Savings Bank. His relief from the cares of business is found in the various clubs of Worcester, of one of which, the Commonwealth Club, he was two years the president. Nor do these wholly gratify his tastes and desires. In 1891 he bought for a summer residence the "Hillside Farm," the former home of John B. Gough, and here he indulges his fancy for horses and cattle to his heart's content.

Mr. Hogg married, in 1871, Frances, the third daughter of G. Frederick Hapoldt, of Philadelphia, and has three sons and two daughters living. William F. Hogg, the oldest son, is associated with his father in business, and represents the fourth generation of the family in the carpet manufacture.

Notwithstanding the engrossing cares of business, the enjoyment of the social life of the club, and the gratification of his fancies on his hillside farm, his chief happiness is found at home and in dispensing, as he does with a generous hand to the poor and needy, gifts of alleviating charity.

CHAPTER XXVII.

THE LEATHER MANUFACTURE OF NEW ENGLAND.

BY ISAAC H. BAILEY.

THE Leather and Shoe industries are so closely interlinked, that though there is a complete difference between them in respect of methods of production, they may with entire propriety be treated as one in a review of their origin and progress. There are, to be sure, innumerable uses to which leather is applied as a material, besides for the making of shoes, and the number and variety of fabrics of which it constitutes the only or the chief material have increased incalculably since New England was transformed from a savage wilderness to an emporium of lucrative productiveness. But the leather tanned in New England was almost wholly for home consumption, and was intended to be made into boots and shoes. The two industries moved in parallel lines. Each was supplementary to the other. In conformity with immemorial commercial law, as the demand for shoes broadened, the supply of leather became greater. The tanners had the advantage that as they were serving their neighbors they had opportunities of finding out what they wanted and could accommodate them more fully than sellers at a farther distance could be expected to do. So their business expanded, and they were prosperous. They were prudent and saving, both in matters pertaining to their art and personally taking all the care they could to prevent waste, though there were no such economies in that respect in those days as have been subsequently brought into practice. They were remarkably ingenious and thrifty, considering the age they lived in. The nature of their trade compelled them to maintain a constant watchfulness over the details of manufacture at every stage. The least neglect of a hide in the process of its conversion into leather could not be otherwise than injurious and might be disastrous. There are few kinds of mechanism more delicate and exacting than the manufacture of leather. Raw material of great value may be summarily injured by bad workmanship, and it is conclusive evidence of the dexterity of the earlier tanners of New England that they accomplished such excellent results as they did.

It was not alone how to make leather, but what kind of leather to make, which occupied the thoughts of the tanner. Fashions were not as capricious and variable formerly as they are now, but it was always necessary to be observant of every sign of change in the popular predilection. There is a long lapse between the time when a hide is put into the vats and the time when the leather made from it receives the last finishing touches—six months is the average now, it was eight months half a century ago. The tanner is always at the double risk, that in the interval prices may fall and styles may change. He has no refuge against either vicissitude. His leather is where he can neither dispose of it nor get at it. For two-thirds of a year his

capital is buried, and he must wait in hope of, but not without anxiety about its triumphant resurrection.

The tanning trade of New England has from the beginning been pursued by earnest, capable men. They have been quick to avail themselves of the opportunities thrown in their way, and have steadily reduced the cost of production and improved the quality of the product. For a while they had bark near at hand, and they were not subjected to formidable competition. But the time came when the adjacent forests were denuded, and the tanners of sole leather were compelled to migrate, as it has always been as much of a rule as if it had been prescribed by the law of gravitation, that the hides must be sent where the bark is, and not the bark brought to where the hides are. Early in the century New England tanners went to New York state, where in turn they used up the bark and pushed on to Pennsylvania. The tanners of upper leather, however, remained in New England until within a very recent period. Some of them continue in it yet. They received their bark from Maine and Pennsylvania. It was expensive, but they made up for the extra outlay by the superiority of their handiwork. There came a time, however, when the disadvantage of locality compelled the abandonment of many establishments which had long held the highest reputation for the good quality of the leather produced in them. Rivals sprang up in the West, notably in Illinois and Wisconsin, and experts from the eastern factories were sought after and induced to go to the new fields in which there was a wider sphere for their enterprise. A few tanners pursue their vocation in New England still, as if to illustrate and give force to the principle of the "survival of the fittest." But in a large degree the leather industry in that section is reminiscence. An extensive business is done in the metropolis of New England in leather of all descriptions, and many of the persons and firms who do it own their tanneries; but the tanneries are outside of New England.

The tanners of New England were the pioneers in the leather production of the country. In this respect it is not inapt to suggest an analogy between them and the original settlers in Plymouth. The latter laid the foundation for a great nation, the former prepared the way for a great industry, one of the most colossal in the entire domain of manufacture. Doubtless, in both instances "they builded better than they knew," but it is a grateful and befitting office to bestow upon them the meed of admiration which their achievements challenge. Of the tanners of the last and of preceding generations it may truthfully be said that they were skillful mechanics, sound of judgment, clear-headed, broad-minded, upright and endowed with an especial aptitude for affairs. They encountered innumerable difficulties, were subjected to continual trials, were obliged to undertake no end of experiments to diminish the cost of their production and at the same time to elevate the standard of their workmanship. They did not all succeed, by any means, nor even a majority of them. The winnowing process shook out all, except those who were so panoplied in strength of purpose and amplitude of capability that they were able to withstand the assaults of adversity. Of those who failed little was heard thereafter. That is always the case. The world seldom hears a word of the many who falter and fall back, but there are praises without stint for the few who conquer and push on to fortune. The reverses incident to the business are not wholly attributable to inefficiency. The prices of hides and of leather are liable to sudden and violent fluctuations. There have been tanners whose earnings of years have been swept away in a single season by the shrinkage in value of leather which was lying in the vats and wholly unavailable, while it was declining in price at such a rate that when it was finished it would not bring enough to defray the original cost of the raw material.

On the other hand there have been numerous instances of an advance within a few weeks sufficient to return an immense profit to the holder of the stock in an average-sized tannery. It makes a tremendous difference to a man whether he commences to buy hides on the top wave and get his yard filled just about the time the tide turns; for before he can prepare his leather for market, there may be a fall of forty per cent. for him to meet and battle with. There are persons living who have been overborne in a struggle of this kind. Disabled and without the means and the youth to start again, they are bearing with what patience they can command the misfortunes which they were powerless to avert, but which would not have befallen them if they had begun business half a year later, or if they had been in it long enough before to have accumulated capital to withstand the siege. Until within fifteen years it has been the theory for a century and more that the tanning business, though variable and subject to losses, was sure to be remunerative in any series of five years if well managed. That view of the case is in conformity with the experience of the men who have followed the pursuit all their lives. It has been a rule with scarcely an exception until within fifteen years. But it has not been found absolute since then. Fluctuations in values have been baffling to calculations. Precedents have ceased to be reliable guides. This difficulty has been surmounted by increased dexterity. Production has been cheapened, the expense of distribution lessened, materials utilized to the greatest advantage, and economies practiced which are universally pervasive throughout the mechanical world.

The tanners have one advantage which they have never shown any disposition to avail themselves of, or at any rate which they seldom turned to as good account as they might easily. The supply of the raw material they use is not in the least dependent upon the price at which it is sold. In that respect it differs from most commodities. As cattle are killed for meat, there will be just as many hides if they are cheap as there will be if they are dear; that is to say, provided they will bring enough to pay for curing them, which they will always do. We live in a carnivorous age. Supply is always in eager pursuit of demand, with small prospect of ever overtaking it. Cattle-growing and cattle-killing have increased within twenty years in a far greater ratio than population, and there has been during all that time a surplus of hides, and the tanners have paid unnecessarily high prices for what they have bought. They have of late developed a purpose to restrict their purchases of hides when they are relatively dearer than leather is. If they persevere in this policy, their industry will be in an exceedingly fair way to prosper.

The tanning in New England is chiefly of raw materials of the lighter kinds, calf, goat and sheep skins, and other materials besides bark are used in their manufacture. Considerable quantities of the finest specimens known to the art, of kid and calf and kindred fabrics, are produced in various colors, textures and substances. So nearly has the goal of perfection been reached in this department of mechanism that there is no longer anything of the nature of leather which cannot be and is not made in this country of as good quality in every respect as in any other. If there is any exception to this rule, it is applicable to patent leather, the methods of manufacturing which are the most sensitive and intricate of any which tanners are compelled to adopt. But our artisans are contending successfully with the difficulties that lie in the way of their progress and producing patent leather which rivals in excellence the historic product of the foremost manufacturers in Europe.

The conspicuous characteristic of the leather manufacturers of New England from the infancy of the industry till now that it has developed into such vast proportions, has been their aptitude for meeting emergencies and adapting themselves

to circumstances. They have availed themselves of all the knowledge it was possible for them to acquire of the ways in which they could improve their workmanship; they have always been ready to test the efficacy of invention; they have kept themselves informed of the popular taste and ministered to it, often leading and directing it; they have managed their affairs so as to continually broaden the markets for their wares. It is owing to their pluck, prowess and foresight that their trade has flourished auspiciously and holds a high rank in the great domain of wealth-creating industry.



FREDERICK JONES.

FREDERICK JONES was born at Athol, Mass., August 31, 1803, and died at Boston, June 6, 1887. He was a son of Prescott and Jane (Moore) Jones, and was a lineal descendant of Lewis Jones, who came from England, and settled in Roxbury about 1636, where he is recorded as having joined in 1640 the church of which Rev. John Eliot (the apostle) was pastor. Later he removed to Watertown, and his descendants afterwards settled in Weston, Templeton, Athol and other places. The family is of Welsh origin, and its members have been always practical people, distinguished for acts and deeds, rather than for theories and sentiments, and a sensible, God-fearing and well-to-do people. Frederick Jones appears to have inherited in a marked degree the characteristics of the family. He was eminently practical in his purposes, a close calculator, cautious and deliberate in forecasting and planning, enterprising, energetic and persistent in the execution of his plans, a man of excellent judgment and uniformly successful. He was temperate and frugal in habit, unpretentious, of quiet, unassuming manner, never ruffled, always pleasant and mild of spirit, thoroughly candid and honest, and he enjoyed the full confidence and respect of all who knew him. He was in the strictest sense a self-made man. He found a work and followed its leadings, and adapted himself step by step to its development and demands. He always carried himself with an easy independence that showed that toil was equally a pastime. It was his practice, as well as that of his brother Josiah M. Jones, to devote to business only the forenoon of each working day, reserving the afternoon and evening for recreation. Every pleasant afternoon, with a regularity that was generally remarked, these two brothers, each in his own carriage, and accompanied by his family, were to be seen enjoying a drive in the suburbs of Boston.

He married December 1, 1831, at Athol, Maria, daughter of Samuel and Hannah (Moore) Sweetzer. His wife was a woman of much gentleness, grace and refinement, who, by her cheerfulness, excellent housewifery and devotion, made his home an ideal one; and who, by her thrift and counsel, contributed in no small degree to her husband's success. She died at Swampscott, July 16, 1884. There were born to them four children.

The eldest, Caroline, born at Athol, October 28, 1835, married at Boston, September 18, 1855, Francis F. Emery, and died at the same place October 1, 1890. The second child, Jane Maria, born at Athol, May 28, 1837, was unmarried, and died in Boston, March 16, 1858. The other two children, Frederick William and Frederick Henry, were born in Boston and died in infancy.

At an early age Frederick Jones entered the tannery of his father at Athol as an apprentice, and served the regular time at that branch of industry. In 1825 his



Frederick Jones

father retired from business, and Frederick, in connection with his brother Prescott, Jr., succeeded to it. They operated it together for a year or two, when the last named removed from Athol to Boston, where he engaged in business as a dealer in hides and leather, and died in 1839.

In 1831 Frederick Jones added to his business of tanning that of manufacturing heavy shoes and brogans. Some lighter shoes had been made previously in Athol, but only in a small way, and Mr. Jones started the industry upon a larger plan. Four years afterwards the manufacture was changed from shoes to boots, and the business finally became one of the important industries of the town. The tannery and the boot factory were operated by him and his partners until about 1872. His first operation after embarking in the shoe business was to exchange leather for shoes with the country shoemakers and with the farmers who employed their leisure time in winter in shoemaking. In 1832 he again enlarged his operations and took his first lot of shoes to New York for sale; teaming them over the road to Hartford, and thence carrying them by steamer, arriving in New York the day the cholera was announced. The city was in extreme panic, streets were deserted, stores closed and business was not to be thought of. The sale of shoes was out of the question, and Mr. Jones left those he had brought with Tileston, Hazeltine & Co., who were, at that time, large commission dealers. He afterwards dealt largely with them and with other New York houses. In 1833 he again enlarged his business operations by embarking in business in Boston as a dealer in boots, shoes and leather, being associated then with his cousin, Nahum Jones, under the style of F. & N. Jones. He continued to reside in Athol, and personally conducted the operations at the tannery and the boot factory until 1838, when he removed his residence permanently to Boston. The firm of F. & N. Jones was located on North Market street, and, in addition to the products of the tannery and boot factory at Athol, it sold the products of a factory which it operated at Natick. The firm of F. & N. Jones was dissolved in 1847, Frederick Jones continued alone until 1853, when Francis F. Emery, who was formerly with James P. Thorndike, of the leather trade, and afterwards for two years in California, became associated with him as partner, the firm being Frederick Jones & Co., which firm continued until 1882, when Mr. Jones retired permanently, and the business was continued by Mr. Emery. The firm of Frederick Jones & Co. manufactured and sold all kinds of heavy boots and shoes, for men's, boys' and youths', women's, misses' and children's wear; selling only to the wholesale and jobbing trade. The business of the firm approached the largest in the trade, their product aggregating from 500,000 to 1,000,000 pairs per year, and the employees numbering from 500 to 1,000. They had factories at Ashland, Milford, Athol, South Braintree, Brockton and Plymouth, Mass., and at Dover, Farmington and Alton, N. H. During the Civil War, this firm manufactured largely sewed and pegged boots and shoes for the army, making in three years nearly a million pairs of these goods. The firm also dealt largely in leather and hides, importing the latter from domestic and foreign ports.

Mr. Jones was early identified with real-estate operations in Boston, having, in company with his brother Joseph M. and others, built largely on Pearl street and at the south end. He was in active business in the boot and shoe trade for fifty-seven years, and no man in the guild was more highly respected, nor could one be more worthy of respect. His business life was an example of gentleness, purity and uprightness. He lived to a very old age, but his temperament was so serene and his habits were so exemplary that he showed but few signs of old age to the last.

On June 10, 1887, the day of his funeral, the members of the Shoe and Leather

Trade assembled at the rooms of the New England Shoe and Leather Association, at a meeting called for the purpose, and the following resolutions were adopted as an expression of the general feeling:

"WHEREAS, In the order of Divine Providence, Frederick Jones has been removed from our midst by the hand of death, therefore

"*Resolved*, That in him our trade mourns its oldest, as well as one of its most respected and honored members, and the community in general, a representative man; one who for more than fifty years was a member of that branch of mercantile industry which we represent, whose distinguished career as an honorable merchant has identified his name with the history of our city, and done much to establish and maintain its reputation as one of the great commercial centres of our country.

"*Resolved*, That the record of diligence, industry, steadfast perseverance, thrift and economy which marked his years, remains for the imitation of those who are entering upon business life. We recognize the skill and foresight which he displayed in the prosecution of the large business in the control of which he took such a prominent part for so long a series of years.

"We shall emulate his untiring energy and imitate the strict honor which marked his transactions, while his Christian kindness has our grateful remembrance.

"*Resolved*, That these resolutions be entered upon the records of this association, and a copy of the same be sent to the bereaved family."

The committee consisted of William Claflin, Charles A. Grinnell, Edward H. Dunn, Henry Bond, James Tucker, William H. Allen, Edward L. Pickard, Daniel W. Wilcox and Jacob Friedman.

Mr. Jones did not confine his usefulness to his "shop," but gave the benefit of his counsel and active co-operation to various organizations. He was a life member of the New England Historic Genealogical Society, the Museum of Fine Arts, The American Board of Commissioners for Foreign Missions, The Home Missionary Society, The Young Men's Christian Association, and other kindred societies, to which he annually contributed liberally. He was a director in the National Hide and Leather Bank, a trustee of The Penny Savings Bank, a trustee and active director of the Bradford Female Seminary at Bradford, Mass., and of the Young Women's Christian Association of Boston. He was an early parishioner and trustee of the Shawmut Congregational Society, and one of its Building Committee. To his aid and efforts the Society was much indebted for its final success in erecting the commodious and attractive structure which for so many years has been prominent in Boston. Many of these societies and associations adopted resolutions similar to those before quoted, deploring his death and eulogizing his virtues. He contributed liberally to, and was a sincere friend of, the College of Beyreuth. He endowed the Andover Theological Seminary with a professorship for elocution, known as the Jones professorship, and also endowed the Young Women's Christian Association of Boston with a fund known as the Frederick Jones fund.

At his funeral his pastor, Rev. E. B. Webb, in his address said: "We bow reverentially to the will of God, and thank Heaven affectionately for a life useful in the affairs of earth, happy in the serene hope of Heaven, and adorned with Christian grace."

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NATHANIEL ROGERS TREADWELL.

CLOSELY identified with the leather interest of Massachusetts, and justly ranked among Salem's most honored and esteemed citizens, was the late Nathaniel Rogers Treadwell. He was a native of New Hampshire, born in Warner August 24, 1826. His boyhood was passed in his native town, and in



S. R. Sheadwell.

Ipswich, this state, whither he had gone to live with an aunt, as his mother died when he was only six years of age. As he approached manhood he decided to learn the currier's trade, and went to Salem and entered the employ of the late Leonard B. Harrington. He was then eighteen years of age. He remained with Mr. Harrington some time, and later was in the employ of Alvah A. Evans, and finally, in 1849, he went into business for himself, and continued a number of years, when a partnership was formed under the firm-name of Ira Brewster & Son. Mr. Treadwell later succeeded this firm, and thereafter, as sole proprietor, continued the business until his death, March 1, 1888. Through the able management of Mr. Treadwell, the business had increased from a small beginning to one of the representative establishments of Essex County. The old leather industry has been succeeded by the manufacture of morocco, and the establishment is continued under the firm name of Treadwell Brothers & Clark.

Politically he was a Republican, and never swerved from the principles of that party. Although not a member of any religious body, he was an attendant at the Universalist Church.

Mr. Treadwell was interested in all matters tending to advance the interests of Salem, and all worthy objects found in him an earnest supporter. He was a member of the Common Council of Salem three years in succession. He was a director in the Asiatic National Bank, and also a trustee of the Harmony Grove Cemetery Association, and during the old militia days was a member of the Salem Light Infantry.

December 10, 1851, he united in marriage with Lucy Emily Redding, daughter of William and Elizabeth Redding, of Salem, and their family were as follows: Emily Rogers, wife of R. Clayton Harris, deceased; Annie French, wife of Clarence Sumner Clark; Lizzie Ellen, deceased; Louie Ormond, deceased; Frank Rogers and Harry Day.

As a type of manhood of the sterling New England quality, in its triple union of moral, mental and physical worth, Mr. Treadwell would have been a marked man in any community. He embodied and exemplified those qualities of mind and heart which distinguish what we love to call our self-made men. Decision of character, tact and sagacity were indicated in every line of his strong, earnest face, and when united with his excellent physique, the picture is complete of a man born to achieve success in business, and to command the confidence and respect of his associates. With fewer opportunities and less ability to turn them to his own advantage, he would still have been a successful man, by virtue of his native instincts of thrift and perseverance, habits of industry, and temperance in all things. He did not covet political position, but quietly mastered the principles and details of his business, and advanced by the force of personal merit to a station of large business responsibility, and always proved equal to the demands which were made upon him. His mind naturally and easily grasped the reason of things, and hence he was thoroughly practical in his work and affairs. In an age distinguished for eminent skill and the application of force to the development of material resources, men of the quality of Mr. Treadwell are absolutely indispensable. He was conservative and shrewd, a business man of the highest integrity and signal ability, rich in experience, of great knowledge, faithful in all his relations, above fear and beyond reproach. Such were the qualities which placed Mr. Treadwell in the proud position he occupied. His temperament was cool, his judgment unerring and his estimate of men was almost infallible. He was cautious and careful in making his calculations and reaching conclusions, but his calculations when made were almost universally correct, and from his conclusions no argument or obstacles could turn him. Underlying and

supplementing all his qualities as a business man was the experience of his early life, from the lowest rung in the commercial ladder, which made his progress steady and sure.

AMOS W. DOWNING.

DURING the seventeenth century there were many immigrants in New England bearing the name of Downing, but it is not known from which one of these Mr. Downing is descended. Members of one or another of the families of these ancestors are mentioned in the histories of Antrim, Gilsum and Swanzey, N. H., Kennebunk Port, Maine, the town of Hanover and of Chester County, Pa., of Merrimack Valley, Mass., and of Orange County, N. Y. Perhaps the most distinguished of the American Downing ancestors was Emanuel Downing, a lawyer of the Middle Temple, London, who married Lucy, daughter of Adam Winthrop, and settled in Salem in 1638. As Emanuel seems to have been the earliest Downing immigrant, it is not improbable that those who came later to New England were his kinsmen and followed his example in seeking their fortunes in the new world. The fact that the name is by no means a common one adds force to such a presumption.

Amos W. Downing is what the world calls a self-made man. If being self-made is to succeed in life without the advantages of a liberal education, the designation is a true one. But the characterization is not sound, for no man is self-made. His success is due to either a good character or a natural intelligence, or both, unless, as only occasionally happens, it is owing to accidental good fortune. This character and intelligence come to him from some more or less remote ancestor, who had all the advantages of a good education, and thus is illustrated the beneficial result of our common-school instruction, which, though not especially conspicuous in its immediate recipients, will be handed down from father to son and be felt by generations yet to come.

Amos W. Downing, the son of Samuel H. and Eliza (Davis) Downing, was born in Middletown, N. H., March 31, 1838. He attended the common schools until he was twenty years of age, at the same time learning and working at the trade of shoemaker with his father. At that age he had not only become a skilled workman, but had won a reputation in his native town for industry, intelligence and honest dealing. The shoemaker's shop proved, however, too narrow a field for his expanding mental powers, and he looked beyond its borders for something better calculated to exercise them. He was now supplementing his school instruction by process of absorbing knowledge peculiar to minds which demand an ever increasing amount of food for their inevitable development. About this time, a general storekeeper at New Durham Ridge, N. H., wishing to give up business, offered him his stock in trade, taking his unsecured note in payment. This offer, which was accepted, shows the confidence felt, not only in his integrity, but also in his business ability, without which his integrity alone would not have enabled him to insure such a success as would make the note good. Wholesale dealers in Boston, when asked to supply him with goods, satisfied themselves on inquiring of his character, and sold him bills on credit. After a career of three years of successful business, he sold out and removed to Haverhill, Mass., where he established himself in the grocery business, opening a first-class store. Still his business views became broader and demanded a wider field of activity.

After three years in the grocery business, he sold out and in 1867 began the leather business in Haverhill, confining himself for four years to this trade. He



Amos W. Downing

then became one of the firm of B. F. Thompson & Co., tanners, with tanneries at Portville, N. Y., and Hickory, Pa., and a store in Boston, where he may now be daily found at 187 Summer street. He was also for some years the senior partner in the firm of Amos W. Downing & Co., of Haverhill and Boston, manufacturers of morocco. In 1893 this firm was discontinued, and Mr. Downing now devotes his whole time and ability to the affairs of the firm of B. F. Thompson & Co. Thus he has advanced step by step from the last to the counting-room, filling each position well, and when outgrowing it, entering upon another better fitted to his tastes and better calculated to exercise and develop his business acquirements.

In his political affiliations Mr. Downing is a Democrat, more nearly allied, however, to the Jeffersonian school, than to the Democracy of the present time, which has grafted on the parent stock those objectionable policies represented in the last Presidential campaign by the young Nebraska statesman. So far as the principles of his party coincide with the underlying principles of the Constitution he is their supporter and advocate; an opponent of a too-centralized and paternal government; a believer in state rights as far as they add strength to the Union, and short of that point where they would tend to weaken and destroy it, and a believer in the proposition that Congress was given the power to lay a tax on imports for revenue only, and not for a protection, which, carried to its logical conclusion, would be prohibition yielding no revenue at all.

Mr. Downing has always been an earnest and conscientious worker in his church; becoming a member of the First Baptist Church at the time of his locating his home in Haverhill, he has ever been active in its growth and development.

At all times a most liberal man, Mr. Downing is invariably among the first and largest contributors to a worthy cause, supporting home and foreign missionary work and educational enterprises. He is also a discriminating giver, applying the same good judgment in the bestowal of his charities that has made him successful in his secular enterprises. An incident in his early business life illustrates his rigid conscientiousness. He had made heavy subscriptions to church work when the great fire of 1872, in Boston, caused him to lose nearly all he possessed, but there was no doubt in his mind as to his being obligated, and he paid every dollar promised.

Mr. Downing was a member of the building committee at the erection of the New Baptist Church, of Haverhill, in 1887, and much of the present perfection of this church edifice is due to his wisdom and careful oversight in the details of the work. When Haverhill's growth on the south, towards Lawrence, had become marked, he foresaw that there would be a field for the building of another church, and he was one of the leading spirits and most liberal contributors in the formation and building of the Mount Washington Baptist Church. He has been a member of the board and executive committee of the Massachusetts Baptist Convention for the past twelve years, and also a member of the financial committee and trustee of the Newton Theological Institution, and a member of the Children's Aid Society of Haverhill.

October 30, 1859, Mr. Downing united in marriage with Susan A., daughter of Captain Robert and Ann (Crockett) Grace, of New Durham, N. H. Mrs. Downing is a woman of sterling character, highly respected by a large circle of friends and acquaintances, and has always identified herself with her husband's interests, and it may be justly said that to her co-operation Mr. Downing ascribes much of his success in life.

Mr. and Mrs. Downing have had three children. Irving Gilman, born June 5, 1866, is the only survivor. He is in business at 86½ Summer street, Boston, a member of the firm of Irving G. Downing & Co.

DANIEL J. BARBER.

CENTURIES ago the wise man said, "A good name is rather to be chosen than great riches." To some this good name comes as a gift, unsought—the expressed judgment of their fellow-men. This is true of the subject of our sketch, a man who has risen, chiefly by his own efforts, to affluence and social position, and through all the changing scenes of an active business life has kept his integrity unimpeached.

His ancestry on both sides is ancient and honorable. It may be traced back into the seventeenth century, and not only is there no shadow of crime resting on a single member of the line, but all have been held in good repute. The paternal grandfather, Joseph Barber, was born in 1744, and died in 1806. He lived in the vicinity of Bennington, in a time of war, but was debarred from military service by the loss of one of his eyes; yet he was enabled to render the Green Mountain Boys aid in various ways, and the relics handed down by him are still preserved and cherished. The maternal great-grandfather was James Bushnell, of Bennington, who was born in 1762 and died in 1858, at the age of ninety-six. His obituary in the newspapers of that date gives an extended account of the prominent experiences of a long and active life, making especial note of distinguished services for the Colonies during the American Revolution. The maternal grandfather, David Bushnell, was the oldest of a family of ten children. He was born in 1787 and died in 1885, in the ninety-eighth year of his age. Elijah Barber, the father of Daniel J., was born in 1798, one of the younger of fourteen children.

In early manhood, and for a number of years, he taught the district school in the farming community in which the families of Joseph Barber and David Bushnell resided. In 1829 he married Electa Bushnell, who was the oldest of a family of nine children. She was eighteen years old, and had been one of his pupils. The fifty-five years of their married life were filled with mutual confidence and enjoyment. Surrounded by a large circle of relatives on both sides, and blessed with health and a comfortable home, they lived a life of comparative content, and were always ready to feed and shelter the cold and hungry. Mrs. Barber died in 1886, two years after the death of her husband, aged seventy-five. Elijah Barber was a man who, through his whole life, enjoyed the confidence of his fellow-men. He was a life-long Democrat, active in caucuses, conventions and elections. He received his full share of civic honors, holding office for about thirty years as auditor, selectman, trial justice, judge of probate, assessor and representative to the state legislature. He was also a member of the convention for amending the Vermont state constitution, when his two sons-in-law, Jonathan Brooks and Perry Thompson, were members of the legislature. Charles H. Barber, next younger brother to Daniel J., has also been a member of the Vermont Legislature, both in House and Senate, and has served his native town in various local offices.

Daniel J. was born in Pownal, Vermont, July 25, 1836, the fourth of seven children. His boyhood was spent on the farm. He attended the district school until the age of seventeen, when he entered Oak Grove Seminary, Pownal, Vermont, which owed its existence to the energy and efficiency of Marcus N. Horton, who began his life-work as teacher in that school. Mr. Barber graduated from the seminary to enter Williams College, from which he graduated in 1859. During his sophomore and junior years he taught school, a common practice among college



D. J. Barber.

students then, and in the summer of 1859 went South and taught a year in the state of Georgia. Political disturbances following the election of Abraham Lincoln as President interfered with Mr. Barber's return to Georgia to teach the same school another year.

December 18, 1860, he married Miss Julia F. Brownell, eldest daughter of Hon. Blackman E. Brownell, of North Pownal.

In the early spring of 1861 he taught another term of school, and in May engaged in farming, which occupation he followed during the next five years. In October, 1865, in connection with the late Lieut.-Gov. William C. Plunkett, of Adams, Mr. Barber bought a factory site at North Pownal, and the partnership of Plunkett & Barber was formed, and a large cotton factory was erected for the manufacture of print cloth. The firm of Plunkett & Barber subsequently became merged in the corporation of Plunkett & Barber Manufacturing Company, and its business was conducted under the general management of Mr. Barber until October, 1871, when the several stockholders sold their stock and the name was changed to North Pownal Manufacturing Company. From 1863 to 1866 Mr. Barber had owned a tannery at Stamford, Vt., in company with Mr. Jonathan Brooks, who, in 1872, was living in North Adams as part owner and manager of a tannery conducted under the firm-name of C. H. Read & Co. In 1872 Mr. Barber bought one-third interest in this tannery, and in 1875 he bought another third interest, and subsequently, Mr. Brooks having died, he purchased the remaining interest and conducted the business alone. The product until 1876 was principally card leather, but from 1876 to 1881 it was chiefly pebble-grain leather for women's shoes; and during the next ten years, mostly russet leather. In 1890 the old tannery, which had stood for sixty years, was burned, involving a loss of about double the amount covered by insurance. Mr. Barber had just erected a tannery at Greenbush, N. Y., and the same year—1890—he purchased a tannery at Readsboro, Vt., and the manufacture of russet leather and wax splits was carried on at both places. At Greenbush the firm-name was "Hudson River Leather Company," and the firm consisted of Mr. Barber and his son Frank J. At Readsboro the firm-name was "Readsboro Leather Company," and the firm consisted of Mr. Barber and his son Archer H. In 1892 the present large factory at North Adams was erected for receiving in the rough the product of both tanneries and converting it into russet, furniture, fancy leathers and flexible splits. Then the Barber Leather Company was formed, consisting of Mr. Barber and his two sons. They manufacture more book-binding leather than any other firm in New England. Frank J. retired from the firm in 1895.

Politically Mr. Barber is a Republican, and has always manifested a lively interest in the welfare of his adopted town. He has served as selectman, prudential committee, assessor, trustee of one of the savings banks; also vice-president and member of the Investment Board. He has been a member of the Congregational Church since 1858.

His children are: Dora A., who was educated at Bradford Academy; Frank J., at Drury Academy; Archer H., at Wesleyan Academy; and Winnifred, at Abbot Academy and Vassar College.

Daniel J. Barber is essentially a self-made man. He has not achieved success by sharp practice, or accumulated wealth by repudiating or compromising his financial obligations. Everything has been acquired by perseverance, application and singleness of purpose. In social life Mr. Barber is gentlemanly and affable, and one of North Adams' most enterprising and honored citizens.

CHAPTER XXVIII.

THE SHOE-MANUFACTURING INDUSTRY IN NEW ENGLAND.

BY ISAAC H. BAILEY.



NEW ENGLAND is the cradle in which the infant industry of shoe-manufacturing in America was rocked. The development of this art within a period of half a century is one of the greatest of the many achievements in mechanism which have made this age illustrious. The pioneers in this field of labor could not have had any conception of the immensity of the harvest which was destined to grow out of the seeds they were planting. Their productions at the outset were limited in quantity, of crude materials, and not especially attractive in respect of style and shapeliness.

Within the memory of men who are still young enough to be in active business there were in many a village two or three little shops in which a few individuals were making shoes by hand. They plied the lapstone with the hammer to fit the hand-cut and hand-closed upper to the last, pounded the wet sole to render it as solid as they could, fastened it to the last with nails, held it over the knee with a strap around the shank, and then with a hammer in one hand, an awl in the other, and a mouthful of wooden pegs ready for service, they pegged the sole and inner sole together. Having gotten the fabric into shape by pegging and by trimming, the latter process consisting of the application of a piece of window-glass, broken over a file to assure a cutting edge, the grain was scraped as a preliminary to the sand-papering of the pegs and of the sole to give them smoothness. Then the bottom was rubbed with a stick, bees' wax was applied to impart a gloss, a coat of ink put around the edge, and, after that had had time to get dry, the operation was repeated, the varnishing was performed and the shoe of the period was ready to be worn. The whole performance was primitive, clumsy and slow.

Shoemaking in winter and farming or fishing in summer furnished congenial occupations to many thrifty men, providing them with comfortable homes and the means for living well, and laying by some savings from their income. Their children, boys and girls, attended school in the daytime and worked at stitching and such other parts of the mechanism as they could do to advantage when they were not studying. Doubtless in the brains of many of these youthful artisans ideas originated which afterwards took practical form in the construction of machines of inestimable value. The children at the cheerful fireside were busy with their hands and with their thoughts, and while they were contributing to the support of the household they were learning things constantly which were destined to speed their way to fame and fortune. The domestic hearths, around which these little groups gathered, were nurseries in which the new-born offsprings of genius were tended in their infancy and

reared to full-grown stature and strength. The surroundings were favorable to their development. They were favored with a hardy climate and an invigorating atmosphere, and under the influence of healthful associations they drank in life with every breath they drew and advanced from the moment they first saw the light by regular stages of progression to sturdy maturity.

The shoe manufacturers had no markets for their fabrics, except such as they sought and found, at first near by and afterward farther off. They succeeded by diligence and perseverance in selling shoes to dealers in the large cities in the middle states. The people of the South were among their earliest and largest customers. The plain, homely, substantial brogan was found by the Southern planters to be the most serviceable foot-covering for its cost, which they could procure for the bondmen over whom they held the undisputed claim of ownership. At that time few ready-made shoes were worn; custom work was deemed indispensable to comfort. Even shoes made to order were the cause of considerable suffering to the wearers, until they had become adapted to the contour of the foot. Being made of leather which was inflexibly stiff, it was rarely that there was not some part of the foot at which they pinched unpleasantly, it being so difficult to fit a person by measure.

Shoes made for promiscuous use were still more liable to inflict pain at some point. It is necessary to take these things into account to form an adequate estimate of the disadvantages encountered by the shoe manufacturers in their early efforts to popularize their productions. There is no other article of raiment of which it is so essential that it should be easy to wear. It is highly creditable to the ingenuity of the shoe manufacturers of New England that they have succeeded so well in clearing this obstacle out of the path of their progress.

The cordwainer's "kit" of that time varied but little from the collection of tools used two thousand years ago. A set of them is preserved in the Museum at Mayence which were exhumed from the ruins of a Roman village. The process of manufacture did not differ essentially in the beginning of the nineteenth century from what it was before the Christian era.

The expansion of the shoe industry during the last half of the present century has been amazingly great. The evolution from the little workshop to the colossal factory building has progressed so quietly that the magnitude of the change can hardly be comprehended, except by those who bestow careful attention upon the subject. Numerous cities have grown up from the little hamlets the inhabitants of which have acquired wealth almost exclusively by the prosecution of the shoemaking art. The consumption of shoes has increased prodigiously. Rival establishments have sprung into existence in all parts of the Union, but New England still holds its primacy and prestige. In every improved method it has led the van. No measure of excellence has been reached which did not serve as a stimulus to further aspirations. The encouragement given to inventive genius has been instrumental in bringing into general use a vast number of machines so dexterous of construction, so admirable in their operation, and so effective in utilizing and economizing labor, that they have greatly enhanced the value of the work done by them and cheapened its cost. The part which machinery plays in the shoe manufacture is of incalculable importance. It was not until after 1850 that these inventions were introduced into the factories to any considerable extent. Subsequently they multiplied so rapidly that now almost every portion of the shoe is made by machinery. Each individual workman does a part of the construction, but the shoe passes through several hands before it is completed, each one doing the share assigned to him in the production of it, the subdivision of labor being so arranged that the best and most economical results are secured.

The workmen in the factories do not, under this system, acquire a knowledge of the trade of shoemaking; that is an unsatisfactory feature of it, but the work is done with such precision and skill, and with so much saving of expense, that the use of machinery has caused a very great reduction in the prices of shoes.

By increasing the facilities of production the manufacturers have augmented the consumption of shoes vastly. They have directed their ingenuity to the conception of new styles and fashions, attractive enough to induce people to buy what they might, without a sacrifice of comfort, dispense with, but which they are tempted to indulge in because they suit their tastes and are not dear. The shoe manufacturers have in this way created a stupendous demand for their wares, so that their annual sales are greatly in excess of the actual necessities of consumers. The varieties of their productions are virtually illimitable. They embrace colors to match all sorts of costumes, materials of every conceivable kind, from the plainest to the most ornate; shapes to suit every fancy and caprice; modes so diversified that no inhabitant of the land, however fastidious or eccentric, can fail to get accommodated fully and completely.

Because of their resourcefulness and versatility the shoe manufacturers of New England have enlarged their business to colossal proportions. There is no country in the world in which there is so great a per capita consumption of shoes as in ours, and this is in a large measure attributable to the masterful ability which has been displayed in every elaboration of the art. They have been continually originating novel and attractive specimens of their handicraft, thereby creating a demand which could never have existed but for their skillfulness.

The extraordinary progress which has been made in the amplification of the shoe industry in New England has been so steady and regular that it has elicited less attention and received less admiration than it is entitled to in view of the fact that so much has been accomplished. There has been a continuous and uninterrupted succession of achievements, and the contributions to them have been so numerous and the effects they have produced have been so striking that it may be said that the guerdons of merit belong to the entire fraternity, no single individual towering so far above his compeers as to impair their claims to renown in a field of endeavor in which they have won distinction, acquired fortune, and rendered inestimable services to their fellow-men.

The fact is self-evident that in this multitude of artisans there must have been vast numbers who possessed in a large degree the faculty of creating fabrics so thoroughly adapted to the predilections of consumers that there were sure to be markets for them as soon as they were exhibited. The producers were full of ideas. They were forever discovering ways of imparting additional value to their wares by investing them with some embellishment which had never before entered into the mind of any rival to supply. In this respect their range of conception seems to have been virtually illimitable. The novelties were brought forward in endless profusion. They accumulated to such an extent that purchasers had not time enough at their disposal to examine them all and make selection of the kind which suited them. They were embarrassed by having so many inviting styles to choose from. Nevertheless, the varieties, so far from having diminished, have steadily continued to increase, until a full assortment in a well-appointed shoe store presents a succession of objects of beauty, at which any tasteful person can gaze for hours with pleasure.

One conspicuous feature of the shoe industry is, that it grew to great strength without nurture and flourished without stimulants. It has had no support or fostering

care from legislation, nor have there ever been any combinations or organizations to infuse vitality into it. It became powerful wholly through the operation of natural causes. The contributors to its success have worked as effectually for the common interest as if they had been in concert from the beginning, although they have not been consciously co-operating with each other. Every one of them has simply evolved his own conceptions in his mind, and produced the best results obtainable therefrom. And with so many minds fixed intently on the same thought, it is not difficult to account for the multiformity and diversity of the fabrics generated in such a fecund soil. Yet they are striking evidences of the prowess of the men whose gifted brains and cunning hands have wrought such vast quantities of shapely articles, alike indispensable in their utility and superlative in their attractiveness.

So much that is wonderful has happened in this age of industrial progress and scientific discovery that we naturally feel some hesitation in exalting the exploits of any one class of experts in mechanical art over others. Nor is it necessary to make any invidious distinctions. It is enough to say that the producers of shoes are entitled to a place in the front rank in the great utilitarian procession, the stately tread of whose triumphal march resounds all over this continent. They have made themselves a place among the artists of their time. They have succeeded in converting large quantities of the plainest materials into objects of beauty and of use. They have performed the doubly valuable function of ministering to the refined tastes of the populace and of adding largely to the aggregate wealth of the nation. Their masterpieces combine the merits of substance with the garniture of show. The satisfaction of looking at them is greatly enhanced by appreciation of their serviceability. They have a property value independently of, and in addition to, the interest they elicit because of their comeliness of appearance. And taking into consideration the immense quantities there are of them, of what an infinite variety of shapes and fashions they are, and how many phases of dissimilar mechanical ingenuity are represented by them, they invest with strong interest the great industry which they have brought to such a high degree of perfection.

The shoe industry has exercised a wholesome influence upon social life in New England. In the great shoe towns the communities are far above the average in culture and refinement. They have excellent schools, well-selected libraries, and all the concomitants essential for making the most of their opportunities for cultivating the graces of friendly intercourse and good neighborhood. They are valuable citizens. They fully comprehend their responsibilities, and discharge them with conscientious fidelity. They display good taste in architecture. They build fine houses; they lay out excellent roads; they establish parks and pleasure resorts; they contribute largely in numerous ways to each other's enjoyment. Being well-to-do and independent, their houses are pleasant and supplied with comforts and even with luxuries. They are peaceful, law-abiding, considerate of one another. They meet together and devise measures calculated to enhance the common happiness. They pay attention to the education of their children. They are diligent; they employ their time to good advantage. And notwithstanding their devotion to business, they have a thorough appreciation of pleasure and indulge in it on suitable occasions with genuine relish. There are so many of them and they possess such diversities of gifts that they are able to do a great deal towards their mutual entertainment and edification. They live in and for each other, and their associations and fellowship are in a very large degree potential in strengthening the ties which bind them together and bring them into closer unity and accord. Their intimacies have been productive of beneficent effects. It is because of them that the people of New Eng-

land have such a faculty for self-government that their local affairs are so judiciously administered; that they conduct themselves with so much discretion and good sense; that there are rarely any disturbances or controversies among them; that they take an intelligent interest in all that is going on in the world, far and near, at home and abroad; that they are familiar with current and with classical literature; that they are constantly adding to their store of knowledge by judicious reading; that they enlarge their experiences of life by travel, at suitable times, in their own country and in foreign lands. They are always on the alert to gather up all the good things within their reach and turn them to the best account.

In their thrifty following of an arduous pursuit the shoe manufacturers have demonstrated that they had in their nature much of the energy and forcefulness in meeting emergencies with which the original settlers in Plymouth Bay were so fully endowed. It devolved on them to labor in a different sphere. They were exempted from the hardships and dangers of warfare. They sought to win the victories of peace, and in pursuit of that aim, they were as earnest in thought and prompt of action as their sires were when they were laying the foundations of the great Republic which grew out of their atom of a colony. The circumstances were entirely unlike. The world admires heroism and valor, and hence will for all time award the highest meed of renown to the Pilgrims of the seventeenth century. But their successors will be honored likewise, though in less degree, for proficiency in the work which they took up and carried forward with so much spirit and sagacity that they have been largely instrumental in transforming a wilderness into a garden and weeds into roses. Their part in the grand drama of evolution, while it did not secure to them as lofty a niche in the temple of fame as was accorded to their ancestors, was quite in keeping with the age in which they flourished. It largely helped to make the people of their day and generation the beneficiaries of the trials and sacrifices of those who came before them. There can be no greater crown of glory for the immigrants who first sought our shores than the power and prosperity of their posterity, who now people a vast continent and are enjoying the fruits of accumulated wealth and advanced civilization. What higher tribute can be paid to the memory of the Puritans than to point to their progeny and recount the wonders they have wrought? They certainly have evolved the best results from their heritage, thereby proving themselves worthy of it. They have practiced the useful arts with consummate skill, yet they have not been indifferent to the æsthetic side of life, but have evinced an intelligent appreciation of forms of beauty in painting and sculpture, and also an aptitude for the lofty blending of the ornamental with the useful.



NATHAN PARKER COBURN.

NATHAN PARKER COBURN was born in Sugar Hill, New Hampshire, February 6, 1817, and was educated in the public schools of that town. After leaving school he worked on his father's farm and in a tannery until he was nineteen years of age, when he went to Hopkinton, Mass., where he commenced in a very moderate way the manufacture of boots. Having in a few years acquired a small capital, he formed a business association with the late Hon. Lee Claflin, which continued until 1854, when Mr. Coburn became a member of the firm



A. J. Coburn

of Claflin, Coburn & Co., of Hopkinton, which under his able management was for many years one of the leading manufacturing firms in the boot and shoe trade of the country. He remained a member of this firm until 1877, when he became a partner in the Boston firm of Wm. Claflin, Coburn & Co.

On the 31st of December, 1891, after an active and uninterrupted business life of more than fifty years, and upon the final dissolution of the firm with which he had been so long and prominently connected, he retired from business with a fortune gained by intelligent and patient industry, and with the confidence and esteem of all his business associates.

For many years Hopkinton was his home, and he represented that town in the Massachusetts legislature. During the War of the Rebellion he rendered signal service in recruiting men for the war from Hopkinton and adjoining towns, and was one of those patriotic and energetic men scattered throughout the commonwealth who by their untiring efforts kept the quotas of the state always full.

In 1864 he removed to Newton, Mass., where he continued to reside until his death. In that city he was always assiduous in promoting every scheme for its welfare, and to his generosity the prosperity of some of its prominent institutions is due. He was one of the largest contributors towards the erection of the Eliot Church, and was conspicuous in the establishment of the Newton Free Library, of which he was a member of the Board of Management at the time of his death, and to which he gave an expensive clock. He was a benefactor of Colorado College, giving it fifty thousand dollars for the erection of a library building and endowment of the library, which was named for him. Nor was he forgetful of his native and surrounding towns in New Hampshire. Though he made to it and them no large gifts, still he was always mindful of their interests, and by constant acts of charity towards their churches and people testified his life-long interest in his native state.

As a merchant few men were more sagacious or more honored. It was said of him at the time of his death, by one who had known him long and intimately, "that he was one of the most capable business men in the country. His abilities were shown alike in the mechanical skill and ingenuity which made him one of the noted leaders in the shoe industry, and the faculty he possessed of buying when and where he could buy to the best advantage, and of selling at the right time and to the right men. He was uniformly sagacious and discriminating in his selection of objects of investment, and because of it he acquired much wealth, in the disposition of which he was charitable, though always judicious." He assisted many young men in establishing themselves in business, or in obtaining an education, and watched with pleasure the success which many of them attained in their respective spheres in life.

Mr. Coburn died at Newton, August 25, 1894, and on the 27th of that month the directors of the Manufacturers' National Bank of Boston adopted the following resolutions :—

"Resolved, That the Board of Directors of the Manufacturers' National Bank have learned with profound sorrow of the death of their esteemed friend and fellow-member, Nathan P. Coburn, a member of the Board since the organization of the Bank, and one whose wise counsels and sound judgment were of great value in the management of its affairs.

"Resolved, That while we mourn the loss of a personal friend and associate, we are not unmindful of the larger loss to the business world of an honorable, upright merchant, and to the community at large of a generous-hearted philanthropist."

The will of Mr. Coburn, in addition to ample provision for his wife and relatives, contained liberal bequests to the following charitable institutions : Massachusetts Home Missionary Society, Newton Cottage Hospital, Eliot Religious Society of

Newton, to be known as the "Nathan Parker Coburn Fund," for assisting the worthy poor of the society and church; the Rebecca Pomeroy Newton Home for Orphan Girls, the American College and Education Society of Massachusetts, to be known as the "Nathan Parker Coburn Fund," for assisting young men in their education for the Christian ministry, and to the Hopkinton, Mass., Public Library. At his death Mr. Coburn left a widow, but no children.

WILLIAM H. H. MOODY.

WILLIAM HENRY HARRISON MOODY is descended from William Moody, who came to New England from Wales in 1633, and, after spending a winter in Ipswich, settled in Newbury in 1634. He is the son of Jonathan and Mary A. (Chase) Moody, and was born in Claremont, N. H., May 10, 1842. He was educated in the public schools of that town, and at the age of fifteen entered the store of Russell W. Farwell, a long-established retail and manufacturing shoe concern, where he spent several years and made himself master of the rudiments of the business, to which through life he has devoted his energies, and in which he has met with marked success. In the latter part of 1861, finding a country village too restricted a field for the gratification of his ambition, he came to Boston, and obtained a situation as salesman in the shoe-jobbing house of Tenney & Ballister, No. 15 Pearl street. At the end of two years he entered, in the same capacity, the shoe-jobbing house of Sewall Raddin & Son at No. 24 in the same street. The first of these firms was chiefly engaged in New England trade, and the latter in the trade of the West; and thus as a salesman for these firms he formed an acquaintance with customers throughout the Northern states which has been of great service to him in his later life.

In or about 1867 the firm of Sewall Raddin & Son was dissolved, and a new firm was organized, of which Mr. Moody became a member, under the firm-name of McGibberns, Moody & Raddin, the younger member being the son of Sewall Raddin, and a member of the old firm. After doing business two or three years, largely with customers in New England and the West, this firm was dissolved, and Mr. Moody became a member of the new firm of Crane, Leland & Moody. After a short time the firm was changed to Crane, Moody & Rising, the last named member taking the place of Mr. Leland. When the firm of Crane, Leland & Moody was formed their establishment for the manufacture of shoes was located at Amoskeag, N. H., but before the change in the firm it was removed to Nashua, N. H. After three or four years of business, chiefly with New England and the West, Mr. Moody retired from the firm, and, going to Claremont, his native place, built a house with the intention, which he has carried out, of making that town the permanent home of his family.

In 1879 he returned to Boston, and, without changing his legal residence, associated himself with F. W. Estabrook and F. E. and George E. Anderson, under the firm-name of Moody, Estabrook & Andersons, with a factory in Nashua, N. H., where Mr. Estabrook and the Messrs. Anderson live, and a warehouse and office in Boston under the charge of Mr. Moody. The goods manufactured by them are men's and women's shoes of a medium quality. The manufactory of Moody, Estabrook & Andersons at Nashua is a representative institution and one of the largest shoe manufactories in New England, the capacity being ten thousand pairs of shoes per day.



1111 H. H. Moody



A. J. Smith

Mr. Moody married, October 25, 1866, at Bowdoinham, Me., Mary A., daughter of Levi S. and Lorana (Orr) Maynard.

Mr. Moody's summer home in Claremont, which he has very aptly named "Highland View," is one of the finest estates in New Hampshire. He is an enthusiast on the subject of the American trotter, and, in addition to his beautiful house and six hundred acres of broken-up land, he has a private track and more than one hundred horses, while his barns are among the finest appointed in the country.

Although his business interests are associated with Boston, he is still deeply interested in Claremont, and all measures tending to advance the interests of that New England town receive his hearty approval.

Mr. Moody has been a director in the Shoe and Leather Bank of Boston, but aside from that he has avoided office of every kind and has invariably refused entangling alliances with enterprises foreign to his own legitimate business, and consequently liable to impair that undivided energy which its successful prosecution demands.

New England owes an imperishable debt to such men as William H. H. Moody who, with well-stored minds of practical knowledge, have given large and comprehensive abilities, sterling integrity and wise and sagacious industry to the development of those manufacturing interests that have made the name of New England synonymous with wealth and prosperity throughout the civilized world.

Mr. Moody has gained nothing by mere luck, but everything by perseverance and well-digested plans and the intelligent application of his energies to the end in view.

Mr. Moody's life has been one of steady and active devotion to business and his great success has been the natural result of his ability to examine and readily comprehend any subject presented to him, power to decide promptly and courage to act with vigor and persistency in accordance with his conviction. Without the advantages of inherited aid he has worked the problem of his own fortune and lives to enjoy the fruition of a successful business career.



AARON FREDERICK SMITH.

AARON FREDERICK SMITH is the son of John and Elizabeth Smith, and was born in that part of Danvers, Mass., which is now Peabody, January 6, 1835. He was educated in the Danvers public schools, and, after leaving school, assisted his father on his farm, until he was twenty years of age. Leaving his work on the farm at that age, he bought a shoe-stitching machine and employed himself in operating it. Two years later, in 1857, he removed to Lynn, and there, hiring suitable quarters, set up a stitching shop, in which he began business with ten operators. As fast as he was able to secure orders from the shoe-manufacturing houses in Lynn he enlarged his business, and only a short time elapsed before his force of workmen was increased to fifty. After eight years spent in performing service for others, he became dissatisfied with the limited opportunities which the character of his business afforded, and associating himself with his brother, J. N. Smith, entered upon the manufacture of shoes. He began business in a comparatively small way on Spring street in Lynn, afterwards building a factory on Oxford street, to meet the requirements of his increasing trade. In 1873 his brother retired from the firm, and since that time he has carried on business solely on his own account. In 1892, finding his factory on Oxford street inadequate for his largely

increased manufacture, he built a factory on Essex street, into which he moved in the summer of that year. This factory, two hundred and ten feet deep, and sixty feet wide on the street, is four stories high, and fully equipped with the best and most approved machinery. It is built of brick and is considered one of the best shoe-manufacturing plants in New England. His entire business is concentrated in this single establishment, and thus he is free from those distractions and annoyances which beset manufacturers who carry on two, three or four shops in as many different towns in various parts of New England. He employs about four hundred hands and turns off an annual product of ladies', misses' and children's shoes valued at about \$800,000. These goods are sold directly to retailers in the West, and to New England jobbers, from the central distributing warehouse in Boston. The character of his work is sufficiently attested by the ready demand which it meets, and the successful career of Mr. Smith, opening with his single stitching machine, and no capital, and developing into a position of high rank among New England manufacturers, is a sufficient commentary on his financial ability and manufacturing skill.

The marked success which has attended Mr. Smith is partly due to his possession of mechanical ingenuity and inventive talent, which have conspicuously supplemented his business capacity. In 1880 he invented the Smith Shaving-Machine, now in almost universal use, which is made in Boston by the Union Heel Trimming Company, which furnishes employment to about sixty operators. He has also improved, by valuable inventions, other machines, among which is one for moulding counters, and has by suggestion and advice rendered to other inventors important assistance. The business of manufacturing shoes, quite as much as that of weaving cotton and woollen, is largely benefited by the inventive genius of the manufacturer, who finds in his industry an ever-increasing demand for labor-saving processes and methods.

The career of Mr. Smith illustrates the opportunities which our republican institutions afford to young men of natural ability to acquire wealth and station by assiduous application and faithful industry, without the aid of higher education and collegiate instruction. Indeed, it may with truth be said that the men who have carried the world along on the road of civilization have been those whose mental power has not been scattered and their natural bent been dulled by an all-round education, chiefly essential to an admission to professions already crowded beyond their capacity to furnish support.

Mr. Smith has devoted all his energies to the management of his business, yielding to no temptations to wander from its legitimate paths into those of political or other public life. He is only interested in enterprises which properly supplement his private business and aid him in his career as a manufacturer.

It may with truth be said, that aside from the performance of his duties as a director in the Central National Bank of Lynn, and his participation in such charitable and philanthropic work as inures to the welfare of the people of his adopted town, and his ready and affectionate response to the demands of his church and his home, his identification with his business is complete, and his devotion to its interests is unbounded.

Mr. Smith married first in Lynn, October 16, 1864, Helen M., daughter of John and Mary (Drown) Hoyt, of Plaistow, N. H., who died July 27, 1883; and second, June 19, 1886, Martha A. Hoyt, his first wife's sister. He has one child, Ella F., the wife of Frank T. Moore, the manager of his factory.



W S Houghton



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J B Kenton

estimate of his real worth than the glowing memorials which find their way into the obituary columns of the newspapers when a good citizen or a great man dies.

Tried by this standard, the quiet, genial, unassuming and generous traits of John B. Renton would call forth a practically unanimous tribute of good will and esteem from his fellow-townsmen and a hearty assent from a widely scattered host of friends and business associates.

These qualities of heart and mind, united with rare business tact and sagacity, sound judgment and a conservative temperament, and above all, an unswerving fidelity to his own convictions, have won for him their natural rewards in firm friendships and easy fortunes, during his long and steadily successful business life.

Mr. Renton traces his ancestry to Richard Renton, who was a currier and leather manufacturer at Hoxton, a suburb of London, who came to America during the emigration excitement in 1819, bringing with him his wife and two children, John Anstee and Mary Anstee Renton. He first located in Haverhill, and in 1831 settled in what is now Groveland, at that time called East Bradford. He was born March 27, 1791, at St. Leonard's, Shoreditch, Middlesex county, England, and died September 18, 1877, aged eighty-six years. Mary A. Renton, his wife, was born May 21, 1794, at Houghton Ridges, Bedfordshire, England, and died April 4, 1865, aged seventy-one.

The father of the subject of this sketch was John Anstee Renton, who was born in Hoxton, England, on March 27, 1816. His wife, Hannah Rollins Burbank Renton, was born in what is now Groveland, Mass., November 26, 1820. John Anstee Renton was a shoemaker and a practical and thorough workman.

John B. Renton, the subject of this sketch, was born in Groveland, Mass., August 22, 1846. In 1860 he removed to Lynn, determined to thoroughly master the manufacture of shoes. He worked assiduously, and finally became a skilled workman in all branches of that industry, and at the age of twenty-one took contracts to furnish and put on heels for shoe manufacturers, this work then being let out much the same as stitching is at the present time. Progressing in the business, a few years later he commenced the manufacture of a fine grade of shoes, which he continued with success up to the time of the great Boston fire. Unfortunately for Mr. Renton many of his customers were victims of that conflagration, and in consequence of their inability to meet their maturing obligations, Mr. Renton suffered a loss of \$18,000. Shortly afterwards came the panic of 1873, when the various failures again brought disaster to Lynn, and Mr. Renton was a loser to the extent of \$15,000. This practically prostrated him financially, but with that determination characteristic of the man, he commenced working again at the bench, where he remained several years. Having saved a few dollars, he was again able to furnish heels, and having accumulated a small fund, and enjoying a credit which he had never permitted to suffer in consequence of these disasters which had visited him, he established in 1883 the business in which he is now engaged, the manufacture of heels, which has increased from small proportions to the present immense business. In the beginning he employed ten or fifteen men. The business has rapidly increased under his energetic management until at the present time he employs about four hundred and seventy-five hands in Lynn and outside factories, and the daily output of his business has increased from a small product to from seventy-five to one hundred and twenty-five thousand pairs of heels.

The business was originally started on Union street in the basement of the old Swain and Fuller building. After one year, the manufacturing having outgrown the original quarters, he purchased a four story building on Exchange street, where he continued until the memorable day of November 26, 1889, when the great fire

swept away the Renton factory with tons of leather and finished stock, the net loss being over twenty-five thousand dollars. He was one of the heaviest losers among the leather dealers in Lynn. Notwithstanding this third heavy loss he promptly set about to repair his fortunes, and while his factory was still burning he gave orders for new machinery, and three days later he had secured a building on Harrison court and announced that he would make up for his loss by doubling his business. This announcement was fully sustained. In just three weeks he had organized a new force and was at work cutting leather, and manufacturing heels of every style and variety, and not a single order was lost by the hindrance to business by his disaster. Only the second year after the fire his business again nearly doubled, and two years later it had increased with marvelous rapidity to nearly four times that of 1889.

Notwithstanding the depression of the last few years his business has steadily increased, and he added to its capacity in 1894 by the erection of another factory in Lynn forty by one hundred and twenty-five feet, three stories high. And in the latter part of 1895, in order to meet the phenomenally rapid increase of his business, Mr. Renton began the erection of a great plant on Harrison Court, into which the entire business was removed in the beginning of 1896. This new building is two hundred and eighteen feet long, and has six stories, with a basement, giving a floor area of over sixty-five thousand square feet.

This is one of the representative institutions of Lynn, and it is not only the largest heel manufactory in this or any other country, but it is larger than any other six or eight establishments of its kind in existence. The most successful of other manufacturers do a business amounting to about seventy-five thousand dollars a year, while Mr. Renton's is over six hundred thousand dollars, and will probably reach a million inside of two years.

His success has not been the result of luck. He has aimed from the beginning to keep his credit good, and after passing through disaster after disaster with his fortune each time an absolute wreck, he met every obligation and paid dollar for dollar, thereby securing a credit which has been invaluable to him in his business connections.

Mr. Renton's business extends from ocean to ocean, and he is personally acquainted with almost every shoe manufacturer in this country, and he attributes his success largely to his experience as a practical shoemaker, a thorough knowledge of leather, and of the requirements of shoe manufacturers in all details.

In addition to this large establishment, Mr. Renton is the owner of the John B. Renton Naptha Extracting Works, also in Lynn. Here the oil and grease from harness and belt leather are extracted, and the remnant production of the principal harness and belting firms throughout the country is utilized. Six tons of leather can be put through the naptha extracting process daily.

Notwithstanding his exacting business cares, Mr. Renton has not neglected his social duties, and his genial and pleasant manners have won for him hosts of friends both at home and abroad. He is active in Masonic circles, and is a member of Mount Carmel Lodge of Free and Accepted Masons, Sutton Royal Arch Chapter, Olivet Commandery of Knights Templar, Boston Lafayette Lodge of Perfection, Giles F. Yates Council, Mount Olivet Chapter of the Red Cross, and Massachusetts Consistory, thirty-second degree. He is also a member of Aleppo Temple of Mystic Shrine; Bay State Lodge, No. 40, I. O. O. F.; and of Palestine Encampment, No. 37, O. F. He is a member of the Ancient and Honorable Artillery Company of Massachusetts, of the Worcester County West Agricultural Society, of the Wholesale Saddlery Association of the United States of America, of the Oxford Club and



Francis W. Breed

Republican Club of Lynn, and a director of the Manufacturers' National Bank of Lynn.

In addition to his property in the city of Lynn, he is the owner of a fine farm of one hundred and forty acres in Barre, Mass., and is an enthusiast on the raising of registered Jersey stock. He has a herd of fifty registered Jersey cattle. Barre is his summer residence, where he entertains his friends in a delightful and generous manner.

Mr. Renton married, November 15, 1869, Martha Jane Winch, born October 23, 1846, daughter of Samuel and Rachel Winch, of Cumberland, Me., and they have had four children, viz.: Clarence Winch, who died January 1, 1879, aged six years; Cora Edna, Ralph Waldo, and Hortense Burbank.

In common with all marked men who have been pioneers in shaping the material growth and prosperity of a community, Mr. Renton has those sturdy characteristics which clearly define a strong individuality, self-reliance and even temper under the severest exigencies, and a uniformly courteous bearing. Kind in speech, tenacious of purpose, courageous in action, and unconquerable in discouragements, he possesses those traits of character on which alone can be built a symmetrical manhood of substantial moral worth.

FRANCIS W. BREED.

FRANCIS W. BREED was born in 1846, and was educated in the public schools of Lynn, Mass. At an early age he was employed in the First National Bank of Lynn, where he remained two years, and afterwards entered the employ of William Porter & Co., shoe manufacturers, as bookkeeper. In this position his special occupation with the accounts of the firm did not prevent his familiarizing himself with the processes of manufacture, the control of operatives, the best and most advantageous methods of buying stock and effecting sales, and he was soon employed in the outside work of securing customers, receiving an interest in the profits. In 1867, at the age of twenty-one, having served a thorough apprenticeship in the business, to which for three years he had devoted his faithful energies, he associated himself with P. A. Chase in the manufacture of shoes, and continued with him, carrying on a successful and increasing business, until 1873, when he bought the interest of his partner, and from that time to the present has relied on his own resources to meet the demands of his growing enterprise. In 1889 his factory was burned, and while its ruins were still smouldering he secured a vacant factory in Marblehead and was soon again turning out a full line of goods. He afterwards rebuilt his factory in Lynn, and the combined daily product of that shop and of his shops in Rochester, N. H., and Athol, Mass., when in full operation, was about eight thousand pairs of shoes. Aside from his manufacturing operations he is largely interested in the leather business, and is president of the Breed Leather Company. As a man of keen perceptions, unerring judgment and great executive ability, his services have been sought in the management of various associations and corporations, and he was president of the New England Shoe and Leather Association, the Beacon Society of Boston, a director in the Boston Chamber of Commerce, the Eliot National Bank of Boston, the First National Bank of Lynn, and the Lynn Institute for Savings.

The vacations of Mr. Breed, while affording relief from the cares of business, have been often made to subserve his business interests. His visits to Florida, Cali-

ifornia, and Colorado and other distant states, have brought him face to face with new opportunities to adapt his product to the wants of the people, and to enlarge the list of his customers. His repeated visits to Europe, while expanding his intellectual resources and cultivating his taste, have also enhanced his ability to initiate and manage large operations in accordance with the latest and highest standards. His attendance at the various Expositions of Paris, Brussels and Philadelphia, eminently fitted him for the position as Massachusetts Commissioner at the World's Columbian Exposition at Chicago, to which he was appointed by President Harrison. "He served on the Executive, Electrical and Legislative Committees of the Commission and appeared before the Committee of Congress to secure funds for the fair. In obtaining a site for the shoe and leather building he rendered great service, visiting Chicago several times for the purpose, and also in having the classification arranged to put all the shoe and leather exhibits in this building."

Mr. Breed is an earnest Republican and a firm believer in the blessings of a protective tariff, and in this connection it may be stated that he is a director in the Home Market Club, and that he bore an important part in the Republican campaigns of 1892 and 1896. He is also a director in the Boston Merchants' Association and a member of the Massachusetts, Essex, Middlesex, Norfolk, Oxford, Park, and Athletic Clubs. He is connected with the Central Congregational Church in Lynn, of which he has been a liberal benefactor, as well as of the Lynn Young Men's Christian Association, in whose welfare he feels a deep interest.


Mr. Breed married, in 1873, Alice E., daughter of Francis B. Ives, of Chicago, and has two sons and three daughters.



CHAPTER XXIX.

PAPER-MAKING IN NEW ENGLAND.*

BY WILLIAM WHITING.

N writing a history of the manufacture of paper-making in New England, such an article would hardly be complete without at least a brief survey of the steps in early times that have led up to the present development of that most important industry. The importance of paper as a potential factor in the development of modern civilization can hardly be realized unless consideration is given to the origin and progress of two arts—that of printing and the manufacture of paper. These go together and are a complement of each other, and are as necessary one to the other as light and air are to health and life.

When, therefore, printing on movable type was discovered by John Gutenberg in 1436 an impulse was given to the demand for paper which has continued to the present day, and had it not been for the inventions and enterprise of the paper manufacturers, printed books, newspapers and art publications could not have been produced at a cost which enables them to go into the hands of every one.

It is impossible to fix with any degree of accuracy when people were first enabled to communicate with each other by means of written symbols, but that some means existed at an early day is beyond question. In the Old Testament we find this command, "And the Lord said unto Moses, *write* this for a memorial." Again we find frequent mention of commands to set up memorials on which were to be written the words of the law, "graven with an iron pen in the rock forever." It is made plain by these and other references that stones and clay hardened like brick were the substances on which the earliest writings were traced. Many years too before the Christian era the skins of animals, the bark of trees and plants were used for the purpose of writing material. Tables were also used covered with wax, so that any inaccuracies might be easily erased.

The next step in the progress of the art was the use of leaves of various trees, and these were superseded by papyrus and the use of parchment. We speak of a leaf of paper, and the expression is doubtless obtained from the leaves of the tree or plant, and the rolling up of one or more of these accounts for our word volume. These plants contained a gelatinous substance which was brought out when the fibre was treated for writing purposes, and this answered to render it impervious to ink in the same manner as the modern method of sizing.

The Egyptians were the first to use the palm leaf, and books written on it are still preserved in the East India Museum and in the British Museum. A writer on the subject states "that the letters or characters being written thereon with an iron

* I wish to express my indebtedness to the following authorities: "Paper and Paper-Making," by Richard Herring; "Early Paper Mills in Massachusetts," by Ellery B. Crane; Clark W. Bryan, of *The Paper World*; *The Springfield Republican*.—W. W.

style, which piercing the outside covering makes indelible letters, and by afterwards rubbing the writing over with some dark-colored substance such as soot or charcoal, the parts etched or scratched have greater relief imparted to them, and the writing is more easily read." The same writer also states that "In the British Museum there are many very singular documents of the kind, one in particular which is written upon 390 leaves, bound as it were in a frame of gilt copper in the form of a tortoise, screws being passed through the strips instead of cords, the fastenings with some addition representing the limbs of the animal."

The practice of writing on leaves gave rise to the custom of preparing the bark of the tree for that purpose, and we find that these ancient people knew of the use of wood for records and were sufficiently skillful to adapt it to such a purpose.

The Chinese, before they became the first paper-makers in a modern sense, used silk on which they painted the letters, but for any documents of a permanent character they found parchment made of skin a more durable article.

The papyrus plant as it first existed grew to be about twelve feet high. It was without leaves and was the best material ever found for conversion into paper until the introduction of cotton or cotton and linen rags proved by experience to be the best fibre for this purpose. Papyrus, as found by the Egyptians in ancient times, has become extinct, and in connection with its disappearance I found a reference made to a curious prophecy of Isaiah in a work on paper-making by Mr. Richard Herring: "The paper reeds by the brooks, by the mouth of the brooks, and everything sown by the brooks shall wither, be driven away and be no more."

This material was cut into strips and soaked in water, and sometimes dipped into a solution of gum, and then rubbed by pieces of ivory, or some smooth, hard substance to obtain a polish corresponding to the modern way of finishing by pressure. We find here again that the germ of the paper industry existed in Egypt several centuries before the Christian era, and that in these times we have simply developed the processes of the ancients.

Gibbon, in speaking of the importance of the industry, refers to Firmus, who raised the standard of revolt against the Emperor Aurelian, and said that he would maintain an army from the profits of his paper trade. These examples show us that this industry has been a prominent one for centuries, and why should it not be when we consider what an invaluable benefit it has been to mankind? Consider for a moment the valuable discoveries which have been transmitted from age to age by the use of paper; the labor saved in transcribing and preserving documents by the use of the twin arts of paper and printing. We are told of instances of one man being occupied fifty years in the production of a copy of the Scriptures, and now, by the use of paper and the printing press, one copy a minute can be produced.

The sources of knowledge are placed in the hands of every one by these inventions, and by the cheapness with which they are placed at the disposal of the public; and this is a benefit which has unquestionably developed our present civilization, and which has been of incalculable value in a hundred ways.

The period when paper was first introduced into Europe is uncertain, but a few facts of interest should be stated in this connection. At the beginning of the Christian era paper of good quality was produced by the Chinese from cotton fibre, and for many centuries previous it was made in the East from various materials prior to the introduction of the art into Europe. The Moors are said to have introduced it into Spain in the eleventh century, and the Crusaders to have brought back from Palestine the knowledge of the industry, and the consequence was the first mill in France in 1189. From that time on the industry prospered, and in the fourteenth

century it may be said to have been well established in France and Germany and Italy. The earliest account of paper-making was a publication written by Ulman Stromer, who built a mill at Nuremberg in Germany in 1390, but many years before this paper was made in that country.

The precise date of the introduction of the manufacture of paper into England is unknown. Some authorities are of the opinion that Sir John Spielman, a German, built the first mill at Dartford in 1588, but it is almost certain that mills existed before this time. Shakespeare, in the second part of the play of Henry the Sixth, the plot of which was laid a century before, introduces the charge of Jack Cade against Lord Say, "Thou hast traitorously corrupted the youth of the realm in erecting a Grammar School, and whereas before, our forefathers had no other books but the score and the tally, thou hast caused printing to be used, and, contrary to the King, his crown and dignity, thou hast built a paper mill." There is not much doubt that this quotation refers to a mill built by John Tate, for we find an entry made in Henry the Seventh's Household Book on the 25th of May, 1498, "For a rewarde given at the paper mylne 16s. 8d.," and again in 1499, "Given in reward to Tate of the mylne 6s. 8d."

To give an idea of the interest in the subject at this period there may be seen in the British Museum a document of 1772 showing more than sixty (60) specimens of paper made from different materials, the result of one man's experiments.

The manufacture of paper, however, did not attain any great degree of perfection until about 1760, when James Whatman established his mill at Maidstone. The business is now conducted by his descendants, and is the largest in the world where paper is made by hand.

This is the proper place to explain briefly the introduction of the Fourdrinier machine which has revolutionized the industry, and instead of five reams of folio a day, as made by hand, there are machines now used that will produce four hundred reams per day. The reduction in the cost of paper by its introduction has been a potent factor in bringing paper into universal demand.

In making paper by hand, moulds and felts of the size desired are used, but the principle of the Fourdrinier machine is an endless wire cloth to receive the pulp on which the paper is formed by a lateral motion corresponding to the "shake" of the hand-made papermaker, and from this wire it is transferred to an endless felt, thence it goes to the dryers and is then sized in a continuous sheet, and cut at the end of the machine by a revolving cutter to any desired size. Probably ninety-eight per cent. of all the paper produced is made on this machine, which was invented in France by Roberts and Didot in 1799, but perfected later on in England by the Fourdriniers, a firm of stationers, who expended their entire fortune in this work.

We have thought it necessary to go over this ground as a proper introduction to our subject, "The History of Paper-making in New England."

We should like to claim for this locality the first paper mill in the United States, but that must be awarded to Pennsylvania. The first mill in the United States was built in 1690 by William Rittenhouse, at Roxborough, near Philadelphia. Authorities differ as to the time of the erection of the pioneer mill in Massachusetts, and the first in New England. The year is fixed by some in 1717, and by others in 1728 and 1730. It was placed on the Neponset River, in the town of Milton, and its history and that of its owners is a most interesting one. It shows the desire of the early settlers to establish manufactures, and great inducements were offered to promote the industry. A statement somewhat in detail in reference to its history I am sure will not be considered out of place.

On the 13th day of September, 1728, the General Court passed a "grant for the encouragement of a paper-mill." The company was composed of the following members: Daniel Henchman, Gillam Phillips, Benjamin Faneuil, Thomas Hancock and Henry Deering. E. B. Crane, in his account of "Early Paper-Makers in Massachusetts," tells us who these men were.

Mr. Henchman, a prominent bookseller and publisher in Cornhill, Boston, was the son of Captian Daniel Henchman, one of the early proprietors of Worcester. Thomas Hancock learned the bookbinder's trade from Mr. Henchman and married his daughter Lydia. He conducted a publishing establishment on Anne street, Boston, near the drawbridge. He was the uncle of Governor John Hancock, and built and owned the Hancock mansion on Beacon street, which was taken down in 1863.

Benjamin Faneuil was the father of Peter, of Faneuil Hall memory, and Gillam Phillips was a brother-in-law of Peter. Henry Deering was the manager of the mill, and Henry Woodman was the foreman. These names indicate that the industry had its origin among the most respected and illustrious citizens of the state. The grant to this company is quite instructive, as showing the difference of legislative acts when it becomes necessary to establish an industry, and when they have already been established.

Then privileges were conferred upon the company without limit, but to-day the growth and power of corporations have made it necessary to restrict and safeguard the interests of the public in the most comprehensive way.

The grant referred to in 1728 gave this company the sole right to manufacture paper in the province for ten years, upon condition that in the first fifteen months they should make one hundred and fifteen reams of brown paper and sixty reams of printing paper; the second year fifty reams of writing paper in addition to the above; the third year and afterwards, yearly, twenty-five reams of a *superior* quality of writing-paper in addition to the foregoing, and that the total annual product of the various qualities shall not be less than five hundred reams a year. It will be noticed that in order to comply with the conditions, four qualities of paper must be produced. This provision would be impracticable in a modern mill. The development of the industry by the introduction of improved machinery makes it economical to produce only one quality of paper.

In 1728 paper was made by hand—that is, instead of employing a modern machine, which will turn off twenty thousand pounds of paper, the product was restricted by this primitive process of hand-made paper already alluded to, and the product of this mill did not probably average one hundred pounds per day. It will be readily understood that when paper is made by this process, that is, a single sheet at a time, a variety can be made from day to day, although even in hand-made mills the tendency in later times was to confine the product to one quality of paper. Richard Fry, of Cornhill, Boston, was the agent for the mill and procured stock for the same, and he returned thanks in 1732 for satisfactory response to his advertisement in saving and furnishing rags. This establishment was compelled to close its operations because of the lack of good workmen, and Jeremiah Smith bought it, and he was compelled to suspend the manufacture for the same reason.

In 1760 the mill was again started by James Boies, son-in-law of Mr. Smith. He was a seaman and a citizen of Boston, and he procured the services of a British soldier by the name of Hazleton, a practical paper-maker, whose principal assistant was Abijah Smith.

Mr. Boies was doubtless an ambitious man, and although those were the days of

small things, we find him in 1764 buying the site of an old slitting-mill built in 1710, by Jonathan Jackson, and upon this he built the second mill. This was destroyed by fire in 1768, and was rebuilt by capital obtained from the province for the purpose of "putting the paper mills in repair." The money furnished was repaid to the state in 1773. Another mill was erected by Mr. Boies and one-half of it was conveyed to Hugh McLean, an old shipmate, August 17, 1774. Mr. McLean was the father of John McLean, the friend and patron of Harvard College and the Massachusetts General Hospital. Mr. James Boies was also a patriot, for we read that he and a Mr. Goddard, of Brookline, had charge of the three hundred teams on the night of March 4, 1776, which drew the white birch fagots used in the fortification of Dorchester Heights, as ordered by General Washington. The movement was a surprise to General Howe, the British commander, and caused him to evacuate the city on March 17 following.

Richard Clark, the paper-maker, who was formerly employed (and who proved himself to be a very competent workman) by Abijah Smith, was a partner with Mr. Boies in the second mill, and Boies and McLean owned the third built in the province.

Mr. Clark died in 1777, and his interest in the second mill was sold by his son George to Hugh McLean, in 1779. George Clark, in 1773, bought several acres of land and erected a fourth on the north side of Neponset River, and sold one-half of it, in 1786, to William Sumner.

April 9, 1782, the factory of Boies and McLean was burned, but we are told it was soon rebuilt. In 1790 the firm dissolved and the property was divided, and in 1796 James Boies, the most prominent figure in all these enterprises, died, aged ninety-six years.

There is also said to have been a mill built at Falmouth, Me., about the year 1735. Samuel Waldo, a merchant of Boston, owning this land, while in England in 1731 contracted with Richard Fry, a paper-maker, to go to New England and start a mill, and the above-named was the outcome of the agreement. Colonel Thomas Westbrook had an interest in this mill, and still another was built by him in Falmouth. Fry was unsuccessful financially, and his interest passed into the hands of Waldo and Westbrook.

These establishments must have been near those now owned by S. D. Warren & Co., one of the largest and most successful firms now doing business in the country.

A mill was built by Christopher Leffingwell in Norwich, in 1766, under promise by the legislature of 2d. per quire on all good writing-paper, and 1d. per quire on all printing and common paper, but the bounty was withdrawn two years later. In 1777 Mr. Leffingwell took his son-in-law, Thomas Hubbard, into partnership with him, and to the present day, an unusual occurrence in this country, the ownership has remained in the family, and a prosperous business is now conducted by The A. H. Hubbard Co.

So far as we have an account only seven mills had been built in New England before the year 1776—four at Milton, two at Falmouth, and one at Norwich, Conn. The product of all must have been small, probably not more than one thousand pounds per day, or say ten to twenty per cent. of the product of one good-sized establishment at the present time. The consumption of paper was small, both for writing purposes and for newspapers, and any deficiency was supplied by importations. When the Revolutionary War broke out the demand for paper was greater, and the supply from England to a great extent cut off. Then great interest was taken to encourage the building of mills, and we find a convention of delegates of Worcester county passing the following resolution :

"*Resolved*, That the erection of a paper mill in this county would be of great advantage, and if any person will undertake the erection of such a mill and the manufacture of paper, that it be recommended to the people of the county to encourage the undertaking by generous contributions and subscriptions." In pursuance of this resolution Mr. Abijah Burbank, of Sutton, located at the outlet of Crooked Pond, now known as Singletary Lake.

This was the beginning of the industry in Worcester county, and was the seventh mill built in Massachusetts. In 1778 Mr. Burbank wrote "that the manufacture of paper at Sutton is now carried on to great perfection."

The scarcity of stock was a great obstacle to the successful prosecution of the business, and the Massachusetts House of Representatives resolved that our committee appoint some suitable person to receive rags for the paper mills. The supply was so inadequate that the *Worcester Spy*, established by Isaiah Thomas on the third day of May, 1775, was obliged to appear sometimes on a half sheet, and at other times on a sheet greatly reduced in size.

There is some doubt expressed in these days whether there exists such an institution as a "struggling industry," but the history of these early days shows clearly that the paper industry had to struggle for existence for many years.

This plant in Sutton, built by Mr. Burbank, is the first one of which we have a careful account of the machinery used, and the various processes. The engines were two, with rolls twenty-six inches in diameter and twenty-four inches long; one grindstone to sharpen the plates to the engines. The rags were cut on scythes held firmly by bolts, and the help required were five men and twelve girls.

This was a two-vat mill; the vat being the receptacle into which the engines were emptied of their pulp. In these vats the workmen dipped the mould, which was made the size of paper required. A shake was given to this mould when drawn from the pulp by the skilled workman, and the sheet of paper thus formed was afterwards dried, sized and finished. The product of this mill was two hundred and fifty pounds per day, and the process required about three months' time.

In 1828 this mill was enlarged by Caleb Burbank and his brother Elijah, and a cylinder machine was introduced. The capacity of the first engines was one hundred and forty pounds; the new ones, one hundred and eighty pounds.

The introduction of machinery throughout paper mills at this time of a heavier type, requiring much more power, caused the sceptre to pass away from the East and find a resting-place farther West, where water-power was abundant, and where for a long time the industry found its greatest development.

In 1776 we find an account of an establishment at East Hartford, Conn., owned by Watson & Ledyard; but the real centre of the paper trade proved to be at Springfield, Mass. It is uncertain when the first mill was built, but there is no question but that it was located at this point. In a biography of Zenas Crane, who left Worcester in search of a site, it is said: "He found at Springfield the mill established probably by Eleazer Wright, prior to 1788, the germ of that which afterwards became noted under David Ames and his sons, D. & J. Ames." In the history of Springfield, contained in the public library, we read that "Samuel Babcock owned the Ames paper mill in 1786."

And in the *Paper World*, 1880, No. 5, we read that a Mr. Patten (Samuel), of Hartford, Conn., built the first mill in the Connecticut Valley, and that in 1800 it was sold to David Ames. As Mr. Ames occupies so conspicuous a place in the development of the paper industry, it may be interesting to know that he was born at West Bridgewater, Mass., February 2, 1760; that he was a commissioned officer of militia

in the Revolutionary War, and that in 1794, in consideration of his services and of his knowledge of the manufacture of arms, President George Washington selected him to establish and superintend the National Armory at Springfield. Some authorities say that he resigned this position in 1800, and others fix the date two years later, but there is very little doubt that his interest in the paper mill dates from 1800.

From this time the development of the manufacture was rapid and was characterized by the same energy and distinguished ability that have always been shown by the members of the family originating at West Bridgewater, and including in its membership such names as Oakes Ames, ex-Governor Ames and Frederick Ames.

It seems advisable to depart from the chronological order of mentioning the new mills erected in the various parts of New England, and give an account of the enterprises of the Ames family, who were the forerunners of the industry. It is important to do so, for in this locality have been established the most extensive plants, and from 1860 to this date four-fifths of all the loft-dried paper in the country have been produced within fifteen miles of Springfield, and all of the establishments covering this territory either directly or indirectly grew out of the industry inaugurated by David Ames in 1800. Mr. Ames had two sons, one David, Jr., born at West Bridgewater, Mass., August 24, 1791; the other John, born at the United States Armory grounds in Springfield, Mass., September 2, 1800. While the first was a paper manufacturer, it is to the second son, John, that we owe the improvements which have changed the business from a hand-made to a machine process. John Ames received the first patent for a cylinder machine May 14, 1822. This consisted of a cylinder running in the pulp, and by suction the fibre adhered to the wire-cloth and was carried thence by felts to the press rolls and dryers. This machine has been superseded by the Fourdrinier, already described, but it was a great advance in the art of paper-making. He also invented in 1830 a trimming-knife, a pulp-dresser, a cutting-machine and a drying-machine; also calenders for finishing the paper, and he originated the idea of running a continuous sheet through the size instead of dipping each sheet, as had been the custom.

The fame of the mill at Chicopee Falls, Mass., where most of the inventions were put into practical use, was very extensive, and every effort had to be made to keep the secrets of the firm. There were many instances of the inquisitiveness of the native born American, and in one case in a suit for infringement of the patent for the cylinder machine, it was shown that two men, citizens of Boston, went into the mill by night and made drawings of the machine, but when built it did not work.

In 1828 the two sons bought the father's interest, and the firm became D. & J. Ames. Besides the original mill at Springfield, the firm bought a mill in Suffield, Conn., built by a former employee named Wood, and one at Chicopee Falls of a Mr. Cox, standing on the site now occupied by the Belcher & Taylor Manufacturing Company, and another at Northampton, formerly owned by the Clarks. It was at this mill where Mr. Joseph C. Parsons, afterwards the manager of the first paper mill constructed in Holyoke, acquired his experience. The Ames built a twelve-engine mill at South Hadley Falls, Mass., and transferred Mr. Parsons from Northampton to this mill as manager.

At this time it has been estimated that the Ames produced one-half of the paper consumed in the country, and it is generally conceded that to the genius of John Ames a greater share of credit is due for inventions improving the process of the art than to any other man. About 1832 the value of the product of their mills was

\$150,000 per annum, and the number of reams produced was thirty-nine thousand three hundred and twenty-four.

The profits in later years were very large and encouraged the proprietors to invest in outside speculations—in lumber and coal lands in Pennsylvania. They did not keep up with the improvements in the business, and the reduced profits and the losses in outside operations caused their failure in 1853, and every mill which was owned by them has since been destroyed by fire. But, notwithstanding this failure, the Ames will always have a high place, among the promoters of the paper industry, for ability and enterprise, and for the men they educated and gave to the industry to carry it on step by step to greater importance.

To Mr. Zenas Crane must be ascribed the honor of being the pioneer of the industry in Berkshire County. Mr. Crane was born in Canton, Norfolk County, Mass., May 9, 1777. This was near Milton, where the first mill in New England was erected. Stephen Crane, Jr., learned the art of making paper in the mill, and afterwards was a proprietor of an establishment at Newton Lower Falls. It was here that Zenas Crane, his brother, received his first lessons, and afterwards repaired to the mill of General Burbank, in Worcester, for further instruction and experience. Having now, in 1799, a competent knowledge of the business, he looked about for a site, and his good judgment led him westward. Finding the field in Springfield occupied he proceeded westward and found in Dalton a place which promised well for the success of the industry—a good water-power and a quality of water for the purpose of washing the stock which was all that could be desired. A mill was completed in 1801, and February 8th the usual advertisement for stock appeared.

The custom of saving rags did not seem to prevail until some years later when the tin-peddler became an established institution. The practice was to go from house to house and town to town to exchange tin, glassware and many other necessary articles of household use for rags, which from the earliest days had been a commodity almost impossible to obtain in quantities sufficient to answer the demand. The tin-peddler was the means of inducing the people to save their waste pieces, and there were firms that sent out from fifty to one hundred wagons, each one having a stock of goods as attractive as possible, with a shrewd man in charge—one who could make nice points in a bargain and return to his employer with a large balance in his favor, and we must not omit to mention that some men were engaged in this occupation who have since been distinguished for philanthropy and for great ability.

Since 1865, the time when the trend toward city life began, the importance of the tin-peddler has diminished, his occupation having become unprofitable because of the collection of rags by cheap labor in the large cities all over the Union. It was the assembling of people in large cities that supplanted an enterprise about which many a story of interest and profit could be told.

Mr. Crane had for partners in his enterprise Henry Wiswell and John Willard, but Mr. Willard transferred his interest to a Mr. Daniel Gilbert. The mill had but one vat, was two stories in height and had a capacity of five reams of paper per day.

It will be noticed that this enterprise and that of David Ames were contemporaneous with the invention of the Fourdrinier machine in Europe, and also of the introduction of chloride of lime as a bleaching agent.

Machines were not used either in this country or in Europe until several years after, because, although paper machines had been built, it took much time to perfect them. Neither were rags bleached in those days as at present into a handsome white color, but were transmuted into paper with no change except what the washing produced, the consequence being that the paper of that day was always of a dingy color.

Mr. Crane sold his interest in the mill since known as the "Old Berkshire" in 1807 to his partner Wiswell.

The second mill in Berkshire County was that of Samuel Church, built in Lee, on the site now occupied by the Hurlbut Paper Company Mill, and a town famous in after time for its many mills and for its enterprising citizens. In 1809 the third mill was built at Dalton by Joseph Chamberlin. This was started in 1809 by David Carson, Joseph Chamberlin and Henry Wiswell. Mr. David Carson purchased an interest in the first or Old Berkshire Mill in 1812, and became the sole owner in 1816. His sons, Thomas G. and William W., were interested with him in the management and conducted the business successfully until 1867, when they sold their interest.

April 6, 1810, Zenas Crane bought David Carson's share in what was known subsequently as the Old Red Mill, and with various partners conducted the business. Between the Pioneer, so named in honor of Mr. Crane, and the Old Red Mill, the firm of Z. & W. M. Crane conducted one noted for the production of fine writing-paper, also another on the line between Dalton and Pittsfield called the Government Mill, where the bank-note paper used by the United States Government is now made.

Byron Weston, in a "History of Paper Making," refers to twenty-seven establishments built in Berkshire County between the years 1806 and 1850, eighteen of which were in Lee, where, from 1840 to 1860, at least one-half of the loft-dried writing-paper produced in the country was made. The noted firm of Platner & Smith was formed in 1835, and, during the period mentioned, was the largest producer of paper in the United States, and the business is now in existence, ably managed by his nephews, Wellington Smith and De Witt Smith.

Four mills were also constructed at Mill River, near Lee, and one at Glendale. There are two firms in Berkshire devoted to the sole production of ledger papers, used for account-books; one was organized in 1849 by L. L. Brown, who learned his trade at Dalton, in the Crane Mill, and by his uncles, William and Daniel Jenks. The other was started by Byron Weston, of Dalton, in 1863, and the mills have justly attained great credit for the quality of their papers.

There is also an establishment at Russell, owned by Chapin & Gould, in which, at one time, Cyrus W. Field, the promoter of the Atlantic cable, had an interest. The Fields were a Berkshire family, and more than one of them were connected, at various times, with the paper business.

Jessup & Laflin started a mill at Westfield, Mass., in 1836, and about 1867 another at Salmon Falls, now owned by the Fairfield Paper Company. Another family that has been instrumental in establishing this industry is the Southworths. Wells Southworth was the first to erect a mill at West Springfield in 1829, and his brother and cousin, John H. Southworth, were associated with him.

George L. Wright, one of the oldest, if not the oldest, manufacturer now living, organized the Agawam Paper Company, in 1859, and the Worthy Paper Company in 1870. Mr. Wright learned his trade at the mill of D. & J. Ames, in Springfield, remaining there from 1831 to 1840. His experience was obtained at Chicopee Falls and at the South Hadley Falls Mill of Howard & Lathrop. He has been a successful man in the best sense of the word, and his integrity and industry are worthy of imitation by all who would achieve success. The Agawam Mill has since been enlarged under the able management of Mr. B. D. Rising.

A mill was organized in 1872 by Chester W. Chapin and others at North Wilbraham, Mass. Thus the Westfield and Chicopee Rivers, tributary to the Connecticut, have furnished for many years power to produce good paper, which has become an article of universal use.

The smaller rivers of New England have been made to do duty in furnishing power to produce this most necessary article of commerce, and as early as 1776 a mill was erected at East Hartford by Watson and Ledyard. In later times the Goodwins, Hammers, Forbes, Duncans and Walker in Connecticut, Tileston & Hollingsworth and Hollingsworth & Whitney in Massachusetts, and others, have followed with similar enterprises; but the power of the streams was limited on which they were situated, and the modern mill, and its extensive machinery requiring great power, could only find a fitting place by the side of some large river. And what river more fitting than the Connecticut, winding its way along from the White Mountains in the midst of beautiful scenery? At various places along its banks are falls that are capable of being utilized for furnishing power. At Holyoke, Mass., there is a fall of about seventy feet in a distance of less than two miles, and here has been developed a water-power almost perfect in every detail. The quality of the water is such—its freedom from iron and other objectionable ingredients—that it is difficult to find any so well adapted to the washing and bleaching of stock. Rags cleansed by this water appear as white as snow.

In the very early days, about 1790, the first canal constructed in the United States was built around these falls on the South Hadley side, and the merchandise traffic of all the region about was carried through this canal by the use of flat-boats.

The first paper-mill on this river was built at South Hadley Falls, near this canal, by Howard & Lathrop, about 1830, and after it was burned, in 1846, the site was occupied by the Glasgow Manufacturing Company for the manufacture of cotton goods.

The second mill, that of the Parsons Paper Company, was started by Mr. J. C. Parsons, manager, in 1853, at Holyoke, Mass. He had for associates Chester W. Chapin, Cyrus Frink, Aaron Bagg, Whiting Street and others—strong and able men who have impressed themselves by their high character and good works upon the industries of this section of the state for all time. It would indeed be difficult to find in any quarter higher qualities of good citizenship than they possessed.

Paper mills thus far had not been of large capacity. The Parsons Mill made about one and one-half tons of paper per day, which was considered a large product, but later on, in 1858, the company added to their output two tons per day. This was a new departure, the making of so much paper under one roof, and the remark was often heard that the Parsons Company had made a mistake in so enlarging its product, but time proved the contrary, and it was found later on that there was a demand for the paper and that it could be made cheaper than in a smaller mill. This was probably the beginning of the idea that large mills could be run more economically than small ones, and Mr. Parsons may be said to have paved the way for the development of the business in this direction.

The second mill in Holyoke was that of the Holyoke Paper Company, the organizer of the enterprise being Mr. D. M. Butterfield, an experienced paper-maker, who had been in the employ of the Parsons Paper Company. Associated with him were Jonas Kendall and Alford White and the Allyns, men under whose direction Holyoke took form and shape as a place of industrial importance. Later on Mr. Greenleaf was the manager of this mill, a skillful and enterprising man, noted for his benevolence and far-seeing charities. His really greatest public gift, although perhaps not so in money terms, was his donation of Forest Park to the city of Springfield, a spot specially adapted for such purpose, and which has been so enlarged and beautified that it draws to itself visitors from all the surrounding country.

The company building the third mill was organized by Stephen Holman, D. H.

Newton, James H. Newton, John C. Newton, Daniel Ashley and William Whiting. This was called the Hampden Paper Company, and was the first that made collar paper in the city.

After that mills followed each other until now there are twenty-one corporations and twenty-four factories which produce two hundred and ninety tons of a high grade of paper per day, excelling the output of any other locality in the history of the industry. It is the custom by reason of economical production to run these establishments twenty-four hours per day, and it is a novel sight entering the city at any time of night to see the lights flashing from the windows, as an ever-present indication of the pressure necessary in economizing time and thus securing a large output of paper.

The enterprising family of Newtons have constructed for themselves and others eleven mills in addition to the Hampden, and four paper and pulp mills outside of the city.

About thirty miles higher up the river, at Montague, Mass., a fine water-power was developed by Col. Alvah Crocker, of Fitchburg, and associated with him were Edwin Bulkley, of New York, and others. The dam across the river was completed March 20, 1867. The first paper mill erected was that of the Montague Paper Company, then the Keith Paper Company, and others followed soon after. George F. Marshall, of the Montague Mill, was a skillful manufacturer and a leading spirit in the improvements of machinery, which have added so much to the production of modern mills.

Farther up the river was the establishment of the Olcott Falls, and at Bellows Falls, Vt., the mill of the Fall Mountain Paper Company, the proprietors being William A. Russell and A. N. Burbank.

The water-power at Bellows Falls is excellent, and a large industry has been established beside the Fall Mountain Paper Company. In the latter mill more than one hundred tons of paper are made per day, mostly newspaper, and the stock used is largely wood fibre. In this connection it is perhaps best to give a description of the beginning and growth of the use of wood for fibre in making paper. In the early part of this account we have seen that the ancients used the bark of trees, but to modern times we must ascribe the great and successful use of wood fibre.

In Richard Herring's "Paper and Paper Making," written in 1855, he refers to an invention for converting blocks of wood into paper pulp. He states that no matter how successful the process may be, the product can only be used for the cheaper grades of paper. "For all writing and printing purposes," he says, "which are manifestly the most important, nothing has yet been discovered to lessen the value of rags, neither is it probable that there will be."

If he could have looked ahead a quarter of a century and have seen the magnificent forests of Norway and Sweden used to furnish wood-pulp for English paper-mills, and those of Maine, New Hampshire and Vermont for the paper-mills of New England, he would have seen how dangerous it is to make a prediction in reference to industrial progress in the face of modern genius for invention. It is said that some of the large pulp mills use from ten to thirty millions of feet of lumber for this purpose per annum, and there is greater apprehension of the destruction of our forests from this cause than from that of furnishing lumber for building material.

In 1844 a Mr. Kellar secured a patent for making ground wood pulp, which he sold to Henry Voelter's Sons. The sons, Henry and Christian, improved the machine and secured a patent in France, April 1, 1847, and in Germany, August 29, 1856, and in United States, August 10, 1858. The Hon. William A. Russell had the

foresight to see great possibilities in this invention, and hazarded his entire fortune in developing it. The consumers of paper were prejudiced against the use of wood, but after a time became convinced that for daily newspapers, so far as its quality to receive printing impressions was concerned, it was superior to any other fibre, and it is now used almost altogether for newspapers, the price of which article having been reduced by the new process from about eleven to two cents per pound. Albert Pagenstecher also made this pulp in 1865 in Stockbridge, and furnished it to the mills in Lee. He was one who had implicit faith in the new invention, and with Mr. Russell has been one of the most steadfast in his faith that there was a great field for wood fibre in the manufacture of paper.

In 1854 Watt and Burgess, Englishmen, secured a patent in the United States for converting wood into paper. The wood was reduced to shavings and fine cuttings. Mr. Elizur Smith, of Lee, Mass., made paper from this pulp, and samples of it can now be seen at the office of the Smith Paper Company. This was the first wood converted into paper in this country, and to Mr. Elizur Smith belongs the honor of having produced it.

There are other processes, producing a fibre of a different character, which can be safely used in writing papers of the lower qualities, and especially where the paper is not intended to be used for documents which it is necessary to preserve. The wood requires such a radical process of bleaching that in time the color fades and the fibre disintegrates. The soda process, when soda ash is the reducing agent, and the sulphite process, when sulphur acts the same part, are the two processes producing a stock which can be used in writing papers. There is a very large amount of stock made in this way, and millions of feet of lumber are consumed every year.

In the northeastern part of Massachusetts, the Crockers and Rodney Wallace and sons and George Wheelwright have some of the finest plants for making paper, and their skill and enterprise have accomplished so much that they stand in the front ranks of the industry.

At Franklin, N. H., are the establishments of the Hon. Warren F. Daniell and A. N. Burbank; at Manchester those of the P. C. Cheney Company, and at Sugar River, Hinsdale, Claremont and other places are many mills, all producing a good quality of paper.

But at Berlin Falls in New Hampshire, and at Rumford Falls in Maine, and Livermore Falls, are found the very largest plants producing newspaper and wood pulp at a cost which it is difficult for any other section of the country to rival, because of the abundance of water-power, and the cheapness of the material.

Among the hills of New England, by the side of streams of pure water, and in the midst of the most beautiful scenery will be found many works that have achieved a good reputation and have brought prosperity to the little communities settled around them. But the day for small enterprises of this kind is passing away, and the large mill with a great equipment for power is taking their place, as will be recognized from the statement, that notwithstanding the increase in population from 1870 to 1890, the number of the mills in New England, according to the census, has decreased from two hundred and nineteen in the former year to one hundred and fifty-nine in the latter. There are one hundred and eighty-two tons of strictly loft-dried paper made in New England per day, and of other kinds, including book and newspaper, card and binders' boards and manilla, etc., two thousand tons per day.

The value of the product in 1870, according to the census, was \$21,017,500, and in 1890, \$30,356,793, and the capital increased from \$12,433,374 in the first-named year to \$32,077,481 in 1890. When we recall the fact that in 1830 the Ames in



Thomas Crane

Springfield made one-half of the paper produced in the country, and that its value was \$150,000, the growth of the business, as shown by these later figures, is something phenomenal and is a wonderful indication of the prosperity of the country.

Something should be said of the improvements in machinery. The cylinder machine of John Ames and the Fourdrinier were crude affairs when compared with those now in use, but it would be impossible in this article to more than refer to a few of the changes that have been made. The wire guide of Hutton, the layboy of Kneeland, the addition of rolls for finishing, the new devices for shafting and gearing, and for more easily handling the various parts of the machine added to it by Rice, Barton & Co., and other builders, have made an entirely new affair of it, and the capacity of the machine has been nearly trebled by these improvements. Every year some skillful and bright mechanic contributes something of value to a paper-mill outfit, and to be modern, the manufacturer must adopt it, or lag behind his more enterprising neighbor.

The Jordan engine, first used in 1858, has hastened the beating process on all the cheaper papers, lessening by one-half the time necessary for preparing the pulp for conversion into paper.

It is conceded that now the production of paper is greater than the consumption, and that it will take a few years to establish an equilibrium in this respect. Conservative forces are at work which will aid to bring about this result. That our people have progressed too rapidly in all industrial enterprises is generally admitted, and there is a disposition everywhere to call a halt and allow the country to grow up to the production. New England is in a good position to wait. She is richly endowed by nature with magnificent water-powers, her railroad facilities are unrivalled, and her people are trained manufacturers through three generations. If we retain the simple and economical habits of the fathers; if we value industry, education and character as the chief elements of a successful career, this small section will ever be able to compete successfully with the great industrial centres of our land, and her pre-eminence will never be lost as long as she remains true to these distinguishing traits of her past career of progress.



ZENAS CRANE.

FEW articles are more universally used than paper. It has been both the promoter and the handmaid of our civilization. The public schools, the growing magnitude of business, the multiplication of newspapers, the increased number of book-readers, and the reduction of postage to minimum rates, have all served to enlarge the product of this article, which is estimated to amount in the United States to ten thousand tons per day. Of this amount about twenty-five hundred tons are used for newspapers and books, eighteen hundred tons for wrapping-paper, eight hundred and fifty tons for straw and wood-pulp board, four hundred and fifty tons for writing-paper, and the remainder for various other kinds and grades. About three-quarters of the entire product are manufactured in New York, Maine, Massachusetts, Wisconsin, Pennsylvania, Ohio, and Illinois in the order named, and, while a very considerable amount is exported, the greater part is consumed by our own people. With the increase of the product, the reduction of the cost of manufacture, and the use of wood as paper stock in the manufacture of all but the higher grades,

prices, during the last twenty-five years, have largely receded. News-print paper has, during that time, fallen from fourteen cents per pound to about three cents.

At the beginning of the present century there were perhaps twenty paper mills in America, of which fifteen of small capacity were located in Eastern Massachusetts, Connecticut and Rhode Island. Though many water privileges existed in the interior of New England, the difficult and costly means of transportation, which would necessarily attend their utilization, kept most of them in a dormant state. It was left for one man to finally discover the value of some of these for the manufacture of paper, and to him may properly be applied the name of "Pioneer" in that important industry in western Massachusetts. That man was Zenas Crane of Dalton, the subject of this sketch.

Henry Crane, the first American ancestor of Zenas Crane, was born in England in 1621, and coming to New England, settled in Dorchester, Mass. In 1640 he seems to have been a resident in Braintree, as in that year he was one of those chosen to administer the affairs of that town. His autograph may be found in the Massachusetts Archives, volume 30, page 239. He was at a later date a resident in Milton, where he was a selectman in 1679, 1680 and 1681, and one of the trustees of the First Milton Church. He married, first, Tabitha, daughter of Stephen Kinsley, who died about 1681; and second, about 1683, a wife Elizabeth. He died in Milton, March 21, 1709. His children were: Benjamin, born about 1656; Stephen, about 1657; Henry, date unknown; John, born in Dorchester, 1658, who married, December 13, 1686, Hannah, daughter of James and Hannah Leonard, of Taunton, Mass.; Ebenezer, August 6, 1665; Mary, November 22, 1666, who married March 28, 1690, Samuel Hackett, of Taunton; Mercy, January 1, 1668; Samuel, June 8, 1669, and Anna, 1687.

Stephen Crane, one of the above children of Henry Crane, born as above stated, married, first, July 2, 1676, Mary Denison, and second, August 13, 1723, Comfort, widow of Samuel Belcher, of Braintree, and died July 20, 1738. His children were: Mary, born in July, 1680; Tabitha, October 7, 1682; Elizabeth, March, 1684, who married Samuel Fuller; Samuel, May 23, 1687; Zerviah, November 30, 1690; Benjamin, December 17, 1692.

Benjamin Crane, one of the above children of Stephen Crane, born as above stated, married, December 27, 1722, Abigail Houghton, and had Joseph, born February 28, 1724; Mary, January 23, 1727; Benjamin, June 4, 1728; Abigail, August 16, 1729; Amariah, March 1, 1731; Seth, July 22, 1732; Stephen, May 19, 1734, and Abijah, August 11, 1736.

Stephen Crane, second, one of the above children of Benjamin Crane, born in Braintree, at the date above stated, removed to Canton, Mass., and located himself on the shores of Punkapoag Brook, near Neponset River. He married, November 13, 1762, Susannah, daughter of Nathaniel and Susannah (Tucker) Babcock, and had Luther, born March 10, 1764, who married Jane Morton; Stephen, January 2, 1766, who married Elizabeth Gardner, of Brighton, Mass.; Philemon, January 7, 1769; Susannah, June 7, 1770; Nathan, May 15, 1774, who married, October 19, 1806, Avis Harrington, of Watertown, Mass.; and December 25, 1813, Susan Hastings, of Waltham; and Zenas, May 9, 1777.

Zenas Crane, one of the above children of Stephen Crane, was born in Canton, Mass., at the date above stated, and was educated in the public schools of that town. His future career was fixed by the proximity to his place of birth of an old paper mill in Milton, which had been originally built in 1730, and which was the first mill of that character in New England. When first built it was run a few years by a

company, of which Daniel Henchman, an enterprising bookseller of Boston, was one, but was finally abandoned. In 1760 James Boies, of Boston, hearing of a British soldier named Hazelton, who was familiar with the manufacture of paper, secured for him a furlough, and by the aid of his expert knowledge set the mill in operation. In running the mill, a difficulty in procuring rags was encountered, and in order to excite an interest in what was then a new industry, the following advertisement was inserted in the *Boston Newsletter*:—

“The bell cart will go through Boston, before the end of next month, to collect rags for the paper mill at Milton, when all people that will encourage the paper-manufacturing may dispose of them.

Rags are as beauties that concealed lie,
But when in paper how they charm the eye!
Pray save your rags, new beauties to discover,
For paper truly every one's a lover;
By pen and press such knowledge is displayed
As wouldn't exist if paper was not made;
Wisdom of things, mysterious, divine,
Illustriously doth on paper shine.”

In this mill Zenas Crane and his brother Stephen, who was eleven years older than himself, were for a time employed, and here he learned the rudiments of an industry, to which he was destined to devote his life. Stephen, having learned his trade in the Milton Mill, established himself at Newton Lower Falls, where he built a mill and carried on the business of paper-making on his own account. Zenas entered the employ of his brother at Newton, and there, and afterwards at Worcester, he completed his knowledge of the paper-making art.

With the knowledge thus acquired, Mr. Crane was not content with serving others, but was inspired by an ambition to run a mill of his own. With this object in view, he started in 1799 from Worcester, where he had been completing his trade, and set his face towards the western part of the state. Passing Springfield, where a paper-mill, established by Eleazer Wright, was in operation, and seeking some spot beyond the reach of its competition, he finally brought up at Dalton, where the water-power of the Eastern Branch of the Housatonic and the abundance of pure spring water on the hill-sides arrested his notice and terminated his search for a place of settlement.

The town of Dalton, which then included the territory now within the limits of Hinsdale, was an agricultural town, containing about a thousand inhabitants. Being near the centre of the county, it was the place of residence of several eminent lawyers and physicians. Among these were William Williams, Judge Israel Williams, Calvin Waldo and Dr. Peter Marsh. The natural advantages of the town were thus supplemented by the intelligence and culture of its people, and attracted Mr. Crane all the more strongly to the town, as a place for his permanent business and home.

In the spring of 1801 Mr. Crane, in company with Henry Wiswell and Daniel Gilbert, built a mill on a water-privilege owned by Martin Chamberlain. They had previously bargained for the property, with the promise of Mr. Chamberlain, who distrusted the practicability of the enterprise, to perfect the sale after the erection of the mill. The deed, dated December 25, 1801, conveyed to “Henry Wiswell, Zenas Crane and Daniel Gilbert fourteen acres, one hundred and forty-nine rods of land, together with a paper mill and appendages thereon standing, for the consideration of \$194.”

On the 8th of February, 1801, before the erection of the mill, the following advertisement was inserted in the *Pittsfield Sun*:

Americans!

*Encourage your own Manufactories, and they
will improve.*

LADIES, save your RAGS.

AS the Subscribers have it in contemplation to erect a PAPER-MILL in *Dalton*, the ensuing spring; and the business being very beneficial to the community at large, they flatter themselves that they shall meet with due encouragement. And that every woman, who has the good of her country and the interest of her own family at heart will patronize them by saving their rags, and sending them to their Manufactory, or to the nearest Storekeeper—for which the Subscribers will give a generous price.

HENRY WISWELL,
ZENAS CRANE,
JOHN WILLARD.

Worcester, Feb. 8, 1801.

The mill was a one-vat mill, the daily product of which amounted to twenty-five hundred sheets of writing paper and news-print paper. The news-print paper was sold chiefly to the *Sun*, printed in Pittsfield, and the *Western Star*, printed in Stockbridge, the only newspapers then published in Berkshire County. Mr. Crane was employed as superintendent of the mill, and received a salary of nine dollars per week. This mill was managed by him until 1807, when he sold his one-third interest to Henry Wiswell. In 1812 David Carson bought an interest in the mill, which is now known as the Old Berkshire Mill, and in 1816 he became the sole owner. In 1867 it was sold to a company, and in 1872 burned and rebuilt. In 1884 it was operated by the Carson & Brown Company, and is now conducted by Zenas Crane and Winthrop Murray Crane, grandsons of the subject of this sketch, and John D. Carson. The product of this mill is a first quality of writing paper.

When Mr. Crane sold his interest in the Old Berkshire Mill, in 1807, to Henry Wiswell, he became engaged in a mercantile business in Dalton, which he carried on until 1810. On the 6th of April of that year he bought the interest of David Carson in what was called the "Old Red Mill." This mill was built in Dalton in 1809 by Joseph Chamberlain, Henry Wiswell and David Carson, and David Carson was its chief manager. After the purchase of Mr. Carson's interest, as above stated, in 1810, the mill was run for a time by the firm of Crane, Wiswell, Chamberlain & Cole, and afterwards by Crane, Chamberlain & Cole until 1822, when Mr. Crane, who had, from the date of its purchase, been superintendent and chief manager, became the sole owner. In 1842 he transferred his interest in the mill to his sons, Zenas Marshal Crane and James Brewer Crane, who were already his partners. In 1879 it was burned and rebuilt of stone, and fitted with the most approved machinery. It is now called the "Pioneer Mill," in honor of Mr. Crane, and is operated by Zenas and W. Murray Crane, sons of Zenas Marshal Crane, and Frederick G. Crane, son of James Brewer Crane, under the immediate management of W. Murray Crane.

Mr. Crane died June 29, 1845, and, having traced the history of the mills operated by him, it will not be out of place to allude to the operations of his heirs and successors in the paper-manufacturing business. In 1879 Crane & Co. were awarded a contract for supplying the government with all the paper needed for national bank bills, United States bonds, certificates and treasury notes. For the purpose of filling this contract, which they still hold, they bought a brick mill in Pittsfield, near the Dalton line, which is called the Government Mill. This mill was entirely rebuilt in 1892, and is owned by Zenas Crane and W. Murray Crane, sons of Zenas Marshal Crane, and Frederick G. Crane, son of James Brewer Crane. It is devoted entirely to the manufacture of paper for the government, and, with the United States flag always floating above it, it is constantly watched by officers detailed by the government for the purpose. Its immediate management is in the hands of W. Murray Crane. The introduction of silk threads into the fibre of bank-bill paper, to prevent counterfeiting, was due to the ingenuity, in 1849, of Zenas Marshal Crane, then at the head of the firm of Crane & Co.

The Pioneer Mill makes a large quantity of parchment and bond paper, but its chief product is bank-note paper. Of this paper, aside from that made at the Government Mill under contract with the government, the Pioneer Mill probably produces more than any other in the world.

Between the Pioneer and the Government Mills a stone factory was erected in 1836 for the manufacture of woollen goods. After a few years the business was abandoned, and the mill remained unoccupied until 1850, when, under a lease to Crane & Wilson, it was converted into a paper mill, which is now called the Bay State Mill. The lessees and manufacturers were Seymour Crane, the youngest son of Zenas Crane, and James Wilson, who had been his apprentice. In 1865 this mill was leased to Zenas Crane, a son of Zenas Marshal Crane, and grandson of the pioneer, who afterwards bought up all the interests in the property. It was run by him until May 15, 1877, when it was burned. It was at once rebuilt by the firm of Zenas Crane, Jr., & Brother, the junior member of the firm being Winthrop Murray Crane. Since 1889 the style of this firm has been Z. & W. M. Crane, and its business, under the management of the senior partner, is confined to the manufacture of ladies' fine stationery.

The influence of Zenas Crane, the subject of this sketch, upon his own descendants has not been confined to Dalton or to Berkshire County. In 1847 his third son, Lindley Murray Crane, established a paper-mill at Ballston Spa, N. Y., where he lived until his death in 1879. His grandsons, also, Robert B. and James A. Crane, sons of James Brewer Crane, under the firm-name of Crane Brothers, have built up paper works at Westfield, Mass., in Hampden County, and have there carried on an extensive manufacture of ledger and linen papers and baskets, etc.

Thus Zenas Crane and his descendants of two generations have for nearly a hundred years carried on the business of paper-making, and during that time have maintained a well-established reputation for constantly improving work, unbounded enterprise and unimpeachable integrity. Their products stand at the head, and have both a national and international reputation.

Aside from the business to which Mr. Crane devoted his life, he was occasionally allured into the paths of politics. Federalist in his earlier years and afterwards a Whig, he was several years after 1811 a member of the Massachusetts House of Representatives, and in 1836 and 1837 a member of the Executive Council during the administration of Governor Edward Everett. Following in his footsteps, his son, Zenas Marshal Crane, was the successful candidate of the Republican Party for the

State Senate in 1856 and 1857, and a member of the Council in 1862 and 1863, and Zenas Crane, Jr., son of Zenas Marshal, was also a representative in 1871, and Councillor in 1884 and 1885.

The subject of this sketch married, November 30, 1809, Lucinda, daughter of Gaius and Lucretia (Babcock) Brewer, of Wilbraham, Mass., and had Stephen Dexter, January 29, 1811; Lucinda, March 19, 1813; Zenas Marshal, January 21, 1815; James Brewer, April 3, 1817; Robert B., January 23, 1819; Susanna, December 9, 1820; Lindley Murray, March 17, 1822; Sarah Ann, 1824, and Seymour, September 16, 1826. Zenas Marshal married first, August 29, 1839, Caroline E., daughter of Winthrop Laflin, of Lee, Mass., and second, April 2, 1850, Louise F. Laflin, sister of his first wife, and died March 12, 1887. His children were Zenas, born December 6, 1840; Kate F., October 17, 1843, who married George T. Plunkett, of Hinsdale; Caroline L., April 26, 1851, who married Harry O. Bates, of Morristown, N. J.; Winthrop Murray, April 23, 1853, and Clara L., unmarried. Zenas, the oldest of the above children, married June 17, 1873, Ellen J., daughter of Hon. Charles J. Kittredge, of Hinsdale, and has had Francis K., April 20, 1875; Zenas Marshal, March 5, 1878; Winthrop, October 6, 1879; Charles Kittredge, August 28, 1881; Douglas, May 13, 1883, and Lawrence L., November 10, 1889. Winthrop Murray Crane married, February 5, 1880, Mary, daughter of Robert and Mary Benner, of Astoria, N. Y., and had Winthrop Murray, Jr., born September 12, 1881. James Brewer Crane, son of the subject of this sketch, married October 6, 1842, Eliza Barlow, daughter of Thomas D. Thompson, of Dalton, who died March 4, 1864, and for a second wife Mary E., daughter of Noah Goodrich, of Pittsfield. He died August 4, 1891. His heirs gave to the town of Dalton the sum of \$20,000, to which Zenas and Winthrop Crane, sons of his brother Zenas Marshal, added an equal amount for the erection of a town hall. The building, now completed, is constructed of brick and Longmeadow brownstone, and contains, besides the town hall, the town offices, an opera house and a library, which is called the Dalton Free Library. The children of James Brewer and Eliza B. Crane were Robert B., born June 8, 1845; James Arthur, December 24, 1847; Lizzie L., September 24, 1858; Jennie L., March 8, 1861. Those of James Brewer and Mary E. Crane were Frederick G., born June 21, 1866, and Mary, September 28, 1869.

James Arthur Crane married, January 18, 1883, Clara B., daughter of Hon. C. J. Kittredge, of Hinsdale, and has two children, Elizabeth T. Crane, born November 6, 1883, and James Brewer Crane, born December 13, 1886. Lizzie L. Crane married, January 31, 1884, Dr. William L. Paddock, of Pittsfield, and has one child, Marjorie C. Paddock, born December 16, 1888. Jeanie L. Crane married, June 3, 1891, Dr. F. M. Couch, of Dalton, and has one son, Franklin L. Couch, born March 7, 1892. Frederick G. Crane married, June 21, 1894, Rose, daughter of Dr. F. K. Paddock, of Pittsfield.

Zenas Crane and Winthrop Crane have built a hotel in Dalton, which, in many of its appointments, its plumbing and sanitary arrangements, is equal to any city hotel. It is called the Irving House, and during the warm months of summer it is a most refreshing and satisfactory resting-place for the traveler, who cannot fail to enjoy the cool breezes which are wafted from the valley of the Housatonic, and make the days tolerable and the nights seasons of rest.

Zenas Crane, the subject of this sketch, died in Dalton June 29, 1845, and his widow survived him until May 2, 1872.



William Whiting

WILLIAM WHITING.

ALL the families in New England bearing the name of Whiting, so far as the writer knows, are descended from four ancestors. Nathaniel Whiting came to New England prior to 1643, and married November 4th in that year Hannah Dwight. From him are descended most of the Whiting families in Norfolk County, Mass. James Whiton arrived in 1635 and settled in Hingham as early as 1648. From him are descended the several Old Colony families bearing the names of Whiton, Whitten and Whiting. In the town of Plymouth the last two names are now borne by persons who are as nearly related as second cousins. Colonel William Whiting arrived about 1633 and was one of the early settlers of Hartford, Conn., where his descendants may still be found. The Rev. Samuel Whiting, born in Boston, England, November 20, 1597, graduated at Emanuel College, Cambridge, and married for a second wife Elizabeth St. John. He arrived in Boston May 26, 1636, having with him his wife Elizabeth, a daughter Dorothy, child of his first wife, and a son Samuel, a child of the second wife, and settled as pastor of the first church in Lynn, Mass.

From the Rev. Samuel Whiting, William Whiting, the subject of this sketch, is descended. His more recent ancestors lived in Willington, Conn., and Webster, Uxbridge and Dudley, Mass., and the latter town was the home of William B. Whiting.

William Whiting, one of eleven children of William B. and Elizabeth Whiting, was born in Dudley, Mass., May 24, 1841, and removing with his father to Holyoke, was educated in the public schools of that town. In 1858, at the age of seventeen years, he entered the employ as bookkeeper of the Holyoke Paper Company, and thus early entered on his career as a paper manufacturer, which was destined to become successful and distinguished. On leaving the Holyoke Paper Company, he occupied for a short time the position of traveling and business agent of the Hampden Paper Company, and then bought a mill in Holyoke used for the manufacture of wire and converted it into a mill for the manufacture of fine writing paper, which now is known as the Whiting Mill No. 1, and turns out a daily product of six tons. At a later day he bought land on Dwight street, and built the mill known as the Whiting Mill No. 2, which turns out about twelve tons per day. In these two mills about five hundred hands are employed, whose pay roll amounts to \$180,000 per year. These two mills are the property of the Whiting Paper Company, with a capital of \$300,000, of which William Whiting is president and general manager, and pays an annual tax on a million of dollars. Mr. Whiting is also president and manager of the Collins Manufacturing Company, in North Wilbraham, Mass., which, with a capital of \$300,000, turns out a daily product of seven tons of paper. He is also president of the Whitmore Manufacturing Company of Holyoke, engaged in the manufacture of lithographic paper; and of the National Blank Book Company, also of Holyoke, which by the employment of two hundred hands turns out an annual product valued at \$500,000. The immense product of the paper-mills either owned or managed under the direction of Mr. Whiting, and which are but few of the many mills scattered throughout the country, suggests not only the vast amount consumed by the people, but also the universal education of the masses which demand its use.

The business ability of Mr. Whiting, his methodical work, his great energy controlled by sound judgment, and his incorruptible integrity have not been

permitted to be restricted in their use to his personal concerns, and he has been repeatedly called to occupy positions of trust and honor. He organized the Holyoke National Bank in 1872, and was its president until his resignation in 1891. He is a director in the Chapin Banking and Trust Company of Springfield; a member of the finance committee of the Holyoke Savings Bank; a director in the Holyoke Warp Company; trustee of the Washington Trust Company, in New York; director in the Boston and Maine Railroad, and president of the Holyoke Public Library, and has been vice-president of the Holyoke and Westfield Railroad, and director in the Connecticut River Railroad.

In the field of politics he has been an active member of the Republican Party, and has permitted himself to be drafted and to serve in its interests. He occupied a seat at the Massachusetts Senate Board in 1874, was City Treasurer of Holyoke in 1876 and 1877, a delegate to the National Republican Convention in Cincinnati in 1876, and a member of the Forty-eighth, Forty-ninth and Fiftieth Congresses, serving from 1883 to 1889.

Nor has Mr. Whiting been unmindful of the prosperity and interests of the town where he has lived since boyhood, and where, as a manufacturer, citizen and public servant, he has won distinction and honor. In various ways he has lent a willing and generous aid in behalf of every movement to improve the social welfare of the community of which he is a member. In 1877 he built on Dwight street an opera house and hotel at a cost of \$200,000, both of which are creditable to their owner and to the town.

With such a record as has been briefly related in this sketch it is needless to attempt any special portrayal of the character of Mr. Whiting. The various incidents in his life, the progressive steps in his career, the rank he now holds in public estimation, all point unerringly to the possession of traits which constitute the portrait of a true man.

Mr. Whiting married June 19, 1862, Anna Maria, daughter of Luther M. Fairfield, of Holyoke, and has two sons, William F., born July 20, 1864, who married Annie B. Chapin, of Holyoke, and Raynor S., born January 20, 1867, both of whom are associated with their father in the management of his business.

BYRON WESTON.

EDMUND WESTON, the first American ancestor of Byron Weston, the subject of this sketch, came from England to Boston in the ship "Elizabeth and Ann," and settled in Duxbury, Mass., in 1635. He was probably born in 1606. In 1640 he received a grant of four acres of land at Stony Brook, in Duxbury, and a tract of land at Green Harbor in Marshfield, and died at Duxbury in 1686. His children were: Elizabeth, born 1657; Mary; Edmund, born 1660; and John, 1662. Edmund, second, son of the above, was one of the first settlers in Plympton, Mass., and built a grist mill at a place in that town called Dunham's Point. He married Rebecca, daughter of John Soule, and granddaughter of George Soule, one of the Mayflower Company, and died September 23, 1723. His children were: Nathan, born February 8, 1689; Zachariah, December 6, 1690; Rebecca, July 31, 1693; John, July 27, 1695; Edmund, October 21, 1697; and Benjamin, November 6, 1701. Zachariah, one of the above children, became a resident in Middleboro, Mass. He married June 23, 1717, Mehitable Shaw, and died September 27, 1736. His children were: Jonathan, born



Byron Weston

February 5, 1718; Zachariah, November 17, 1719; James, October 31, 1723; Mehit-able, September 26, 1726; and Zachariah December 21, 1728. Zachariah second, one of the above, married in 1751 Rebecca Standish, of Plympton, and afterwards a daughter of Dr. Pomeroy, of Middleboro. His children by the first wife were: Rebecca, born November 19, 1752; Rachel, October 8, 1754; Zachariah, 1764; and Daniel; and by the second wife, Isaiah, born in 1770, Hannah and Sarah. Isaiah Weston, born in 1770, as above stated, was a Congregational clergyman, and was settled in Fair Haven, Mass. At a time when many of the Congregational ministers were joining the new sect of Unitarians, Mr. Weston went with them, and it is not a violent presumption to suppose that his abandonment of the ministry was due to this cause. He was appointed by President Madison Collector of the Port of New Bedford in 1812, and continued in office until 1815. Soon after leaving the office of collector he removed to Dalton, Mass., carrying with him his family on horseback, and his household goods in ox-carts. Among the furniture carried in this way from New Bedford were a hall clock, which now stands on the stairway in the house of his grandson, the subject of this sketch, and a secretary and a high-posted bedstead, also now in the possession of his grandson. After his arrival in Dalton, he associated himself with his brother-in-law, and, buying a furnace on the East Branch of the Housatonic River, manufactured Franklin stoves. He married Sarah Dean, and had the following children, all born in New Bedford: Grenville Dean, born November 16, 1797; Franklin, June 19, 1800, who died February 10, 1868; Isaiah, September 28, 1804, and Josiah Dean, April 27, 1810. His wife died in Dalton, June 9, 1818, and his own death occurred in that town February 17, 1821. Isaiah, second, one of the above children, married Caroline, daughter of John Curtis, of Dalton, and had the following children: Isaiah, Mary, Byron and Albert. Byron Weston, one of these children, and the subject of this sketch, was born in Dalton April 9, 1831.

When he was four years of age his father removed, with his family, to Illinois, and there died July 30, 1835. His mother, Caroline (Curtis) Weston, died in Texas February 14, 1865. After the death of his father, Byron Weston went to Wisconsin to live with his uncle, Josiah Dean Weston, who was practicing medicine in that territory. Dr. Weston, however, soon returned east, and, about the time of the Mexican War, securing a government contract for the manufacture of book and news paper, went to Saugerties, N. Y., and associated with Charles Van Bentheusen, of Albany, and Charles Wendell, of Northampton, Mass., leased what was known as the Henry Barkley Mill. In the meantime, Byron Weston, his nephew, who had come east with him, had been attending the public schools in Dalton, and at the time of his uncle's removal to Saugerties was fitting himself at the Williston Seminary, in Easthampton, Mass., for the profession of a civil engineer. Abandoning his studies, he entered the employ of his uncle at Saugerties, first as bookkeeper, and later as an apprentice in his paper mill. After remaining a short time in Saugerties, he went to Ballston, N. Y., and continued his apprenticeship in paper-making in the mill of Lindley Murray Crane. From Ballston he went to Lee, and, after a short time spent in the paper mill of May Brothers, was engaged by Platner & Smith, at that time the largest writing-paper manufacturers in the world. Mr. Weston was employed at a salary of \$2,000 as general superintendent of the seven mills belonging to the firm located in various towns, and while holding this position made the first wood-pulp paper ever manufactured in the United States. In 1856 he became associated with William H. Imlay, of Hartford, as the successor of John H. Southworth in the ownership and management of three paper mills at Poquonnock and Rainbow, Conn., and on the death of Mr. Imlay, which occurred not long after, he was employed to settle his large estate.

In 1857 Mr. Weston spent a year in Texas with his mother, who had become the wife of a Mr. Gage, a native of Vermont, and a prominent man in the early days of the Lone Star state, and an intimate friend of General Sam Houston. Returning to Lee, he became associated with Elizur Smith, and, while in charge of the Platner & Smith Mills, the war came on and the inducements to enter the service of his country were such as he was not able to resist. In 1862 he raised a company for the Forty-ninth Massachusetts regiment, of which the late Gen. William F. Bartlett became the colonel, and was unanimously chosen captain. While in the service he was wounded in the knee at Port Hudson, and was offered the command of a colored regiment, which he declined for the sake of the "boys" in his company, whom he had enlisted, and who had confidence in his discretion and friendly care, and to whom he had made the promise to stand by them. Among these boys were: Francis E. Warren, of Hinsdale, since governor of Wyoming territory; David Daltzell, a nephew of Gen. John E. Wood; R. C. Taft, of Egremont; Edward Rising, of New Marlboro; and Lieutenant Judd, of Egremont, who was killed at Port Hudson.

Mr. Weston bought, in 1862, a paper mill in Dalton, known as the Defiance Mill, owned by Henry and Burt Chamberlain. This mill had been originally built by David Carson in 1824, and in 1840 sold to Henry Chamberlain, who later took his brother, Albert S. Chamberlain, as a partner. It was burned in 1852 and at once rebuilt. When bought by Mr. Weston, it was in poor condition and so ill-adapted to his purpose, that he was obliged to practically rebuild it and equip it with new machinery. At the close of the war the demand for paper was so great and prices became so high, that his profits in a single year enabled him to pay for his mill and furnish something for further improvements. In 1865 writing-paper was worth from sixty cents to a dollar a pound, and the older readers of this sketch will remember the greediness with which books of all kinds, and some of great value on account of either their rareness or antiquity, were gathered from attics and closets and sold to peddlers to be again sold to paper-makers and ground up into pulp.

On the stream above the Defiance Mill, and about six hundred feet from it, Albert S. Chamberlain built another mill, which was worked successively by Chamberlain & Mitchell, and by James Wilson until 1867, when it was bought by General William F. Bartlett and E. R. Moodie, a captain in the employ of the Cunard Steamship Company. Col. Walter Cutting afterwards succeeded Capt. Moodie, and with General Bartlett worked the mill until 1875, when it was burned. Mr. Weston then bought the mill and in 1876 erected the present mill, known as the Centennial Mill. These two, with the rag mill where the rags are inspected and cut and cleaned, form the plant owned and managed by Mr. Weston until 1893, when the Byron Weston Company was incorporated with a capital of \$400,000, of which since that date Governor Weston has been President and his son, Franklin, Treasurer and Manager.

In the early days of Mr. Weston's operations in these mills, he confined his manufacture to the production of note and letter paper, but after a time he began to make a specialty of paper to be used for county and state records, and for ledgers and legal documents. This paper is made of new linen and cotton cloth exclusively, and experience has shown that it successfully stands the test of time. It has entirely supplanted in the United States the English hand-made record paper, which until 1867 held our markets. During the real estate excitement and boom in Los Angeles, Cal., in 1885, Mr. Weston shipped to that place about a ton per week to be

used in the preparation of deeds and mortgages. The product of the Byron Weston Company is about four tons per day, and in its manufacture two hundred hands are employed.

In operating the mills the river water is used only to furnish power, but in the process of manufacture only the purest water will answer. This is supplied by Artesian wells, four of which have been sunk by Mr. Weston at depths varying from two hundred to six hundred feet, and supply more water than is needed in the mills at a winter and summer temperature of forty-eight degrees, one well filling a twelve-inch pipe and yielding twenty-five thousand barrels in twenty-four hours, or five hundred gallons per minute. With the exception of a slight trace of lime, which is not objectionable, a careful analysis has shown it to be absolutely pure. The excellence of the paper manufactured by Mr. Weston has been attested by medals received from Calcutta, Sydney, Adelaide and New Zealand, and from the expositions held at Atlanta, Louisville, St. Louis, New York and Chicago, and from the Franklin Institute, the New England Society, the Massachusetts Mechanics' Charitable Association and the California Mid-Winter Fair and other expositions, numbering twenty-one in all. The six largest sizes of the paper made in the mills are the Elephant, 23x28 inches; Colombien, 23x34; Atlas, 26x33; Double Elephant, 27x40; Antiquarian, 31x53; and the Emperor, 4x6 feet, weighing six hundred pounds to the ream. Connected with the mills are about twenty-four acres of land, containing forty houses, more or less, and a portion of the land is occupied by the residence of Mr. Weston, known by the name of Westonholme. Mr. Weston is also the owner of Mount Weston, covering about five hundred acres, the highest eminence in Dalton, on which he has built a Swiss chalet and feeds a flock of about five hundred sheep. He has also a farm of about one hundred and sixty acres in Dalton, where he keeps a large herd of Holstein and Jersey cows and has an extensive creamery.

Notwithstanding the extensive business operations of Mr. Weston, he has found time to interest himself and take part in public affairs. In 1876 he was the successful candidate for the state Senate of the Republican Party, to which organization he has belonged since he became a voter. In 1880, 1881 and 1882, he was Lieutenant-governor of Massachusetts, associated with Governor John D. Long, whose warm friendship he won and has since enjoyed. As a citizen of Dalton and Berkshire County, he has always held the welfare of the town and county near his heart, generously aiding every movement looking to their prosperity. As a member of the Congregational Church in Dalton, he has always been ready to lend a helping hand to advance its interests. The students of Williams College are grateful to him for the gift to the college of athletic grounds, known by the name of "Weston Field." He is vice-president of the Third National Bank of Pittsfield, a trustee and member of the Finance Committee of the Berkshire Life Insurance Company, and Trustee of the Berkshire Savings Bank. He has been twice chosen president of the American Paper Manufacturers' Association, and has received from Williams College the honorary degree of Master of Arts.

Mr. Weston married, June 28, 1865, Julia C., daughter of Clark W. and Ellen (Shaw) Mitchell, of Cummington, Mass., and grand-niece of William Cullen Bryant, and has had the following children: Franklin, born in 1866, who married Edith Brewer, of Springfield; Ellen Mitchell, 1869; Louise Bryant, 1876; Julia Carolyne, 1877; Philip Bryant, 1880; Dorothy Dean, 1887, and Donald Mitchell, 1891. The twenty-fifth anniversary of Mr. Weston's marriage was celebrated on Friday, June 27, 1890, and at the reception held on that occasion, to which nearly two thousand persons were invited, representatives of most of the leading families of Berkshire

were present, as well as those of the various political and business associations with which Mr. Weston had been connected.

Notwithstanding the conspicuous public positions held by Mr. Weston, his chief pride is in his work as a manufacturer, and a general response will be made to the words of Judge Francis H. Deuey, of Worcester, who said in moving to confer on him the degree of Master of Arts, "He is a self-made man, who has materially advanced the art of paper-making, and in so doing has conferred a benefit on the country and the world."

WILLIAM A. RUSSELL.

WILLIAM A. RUSSELL was born in Wells River, Vermont, April 22, 1831. He attended the public school of that town, and later the Academy at Franklin, N. H., and for a time a private school at Lowell, Mass.

In 1848 he commenced work in his father's paper-mill in Exeter, N. H. In 1852, having attained his majority, he leased one of the two mills that had been carried on by his father, and commenced business on his own account. The ambition of both father and son was not satisfied with this limited business, and they formed a copartnership, and erected their first paper-mill in Lawrence in 1853 and 1854, on the site at the corner of Canal and Marston streets. This copartnership continued for several years, until the Russell Paper Company was organized to absorb these, Curtis & Partridge, A. & A. Norton and Joshua Norton Paper Mills. These mills were used for the manufacturing of book and manilla papers.

At this period, 1869, old rags, the principal material for the manufacture of white paper, had so appreciated in value that a new material especially for the manufacture of news-paper was demanded.

Ground wood-pulp had been used to some extent in Germany at this time, and the manufacture of this pulp on a very small scale was being attempted in the old grist-mill of Furness & Giles, by Mr. Maynadier.

Mr. Russell was quick to see the merits of this fibre, and at once made arrangements with the inventor of this patented process for the New England states.

The amount of water-power required to manufacture wood-pulp on a large scale, and the distance from the forests, forced Mr. Russell to establish its manufacture outside of Lawrence, and locate at Franklin, N. H., and Bellows Falls, Vt.

Although Mr. Russell, since his residence in Lawrence, has given close attention to business, he has been active in public affairs and a generous contributor to public needs and private charities.

In politics an earnest Republican. In 1868 a member of the city government, and in 1869 representative in the state legislature. In 1872 he was a delegate to the National Republican Convention at Chicago that nominated Grant for his second term, and was also a delegate to the National Republican Convention at Cincinnati, in 1876, that nominated Rutherford B. Hayes for President. Two years later, in 1878, he was chosen to represent the Seventh Congressional District in the Forty-sixth United States Congress. He was appointed and served as a member of the committee on commerce, and became chairman of the sub-committee to investigate the cause of the decline of American commerce, with a view to investigate and propose some plan to restore the same and bring about closer commercial relations and more extensive trade with other countries. His report showed a thorough investigation of the subject, and set forth clearly the difficulties to be overcome, and through



James A. Russell



Robtney Wallace

the presentation of these facts Massachusetts led off in removing one of the greatest obstacles to incorporated maritime investments for the change of the laws in relation to the taxation of property in ships. He was renominated by acclamation, and elected to the Forty-seventh Congress, and promoted to service on the Ways and Means Committee, a position which his long and careful observation and experience in the industrial interests of the country made him well qualified to fill. The tariff question being prominently before Congress, he gave to the house and country one of the most carefully prepared and exact presentations of this subject that was submitted from the protective standpoint.

His well-established and well-organized business he confided to others, giving his whole time and energy to these new duties. Yielding to the very general demands of his constituents, he accepted a third nomination, which was made by acclamation, and was elected to the Forty-eighth Congress. Although earnestly solicited by his constituents to accept a renomination to the Forty-ninth Congress, he felt compelled to decline, and upon the close of his three terms of congressional life, again turned his attention to his chosen pursuit, the manufacture of paper.

RODNEY WALLACE.

RODNEY WALLACE is descended from Robert Wallis, who was settled in Ipswich, Mass., as early as 1639. Benoni Wallis, a descendant of Robert, removed from Ipswich to Lunenburg, Mass., and there married, July 2, 1755, Rebecca Brown, of Lynn. David Wallis, son of Benoni and Rebecca (Brown) Wallis, was born October 16, 1760, and married Susannah Conn. He lived in Ashburnham, Mass., and there died January 14, 1842. David Wallis, son of David and Susannah (Conn) Wallis, was born in Ashburnham, July 14, 1797, and married, July 8, 1821, Roxanna Gowing, of New Ipswich. He removed to Rindge, N. H., in 1846, and there died May 29, 1857, leaving a widow, who died in Fitchburg, February 27, 1876. He was the first of the Wallis family to assume the name of Wallace.

Rodney Wallace, son of David and Roxanna (Gowing) Wallace, was born in New Ipswich, N. H., December 21, 1823. He attended the public schools of his native town until he was twelve years of age, when he entered the employ of Amos Pearce, a farmer of Ashburnham, receiving forty dollars and board for his first year's work, and attending a district school two months in the winter. In those days the country roads were the only channels of communication with Boston, and the produce and manufactures of New Hampshire and Vermont were carried by teams to that city. One of these teams Mr. Wallace drove at the age of sixteen, and continued in that business until he was twenty. At that age, in 1843, he entered the employ of Dr. Stephen Jewett, of Rindge, N. H., a proprietor of celebrated popular medicines, and for six years was his traveling agent in five of the New England states.

In 1853 Mr. Wallace removed to Fitchburg, Mass., and engaged in the book, stationery, paper and cotton waste business, associated with Stephen Shepley, under the firm name of Shepley & Wallace. He remained a member of that firm, and later of the firm of R. Wallace & Co. until July 1, 1865. In that year the firm dissolved, and in the division of its business he took the cotton waste department, which he has since conducted with success. His annual sales of waste to railroads, machinists, cotton-batting and shoddy manufacturers amount to \$300,000. On the 31st of December, 1864, in conjunction with Stephen Shepley and Benjamin Snow, he bought the Lyon Paper Mill and Kimball Scythe shops at West Fitchburg, and began the

manufacture of paper under the firm-name of the Fitchburg Paper Company. At a later date Stephen E. Denton was admitted to the firm. In July, 1865, Mr. Wallace and Mr. Snow bought the interest of Mr. Shepley, and in June, 1868, Mr. Denton died. In January, 1869, Mr. Wallace bought the interest of Mr. Snow and of the widow of Mr. Denton, and since that time he has been the sole proprietor of the business, having, however, in 1879 taken his sons, Herbert I. and George R. Wallace, into the company. At the outset of the business the company owned a single mill with a daily product of one ton of paper. Improvements and additions were soon made, a new dam constructed and new buildings erected or purchased, until at the present time its business is prosecuted in four mills on the banks of the Nashua river, furnished with the most approved machinery and producing twenty-five tons of paper per day. The plant of the company includes a large number of houses for the operatives, of whom nearly two hundred are employed. The product of the mills comprises lithographic paper, and paper for coating, card, book paper and wall paper, and is sold entirely on orders, which it has been difficult to satisfy without the employment of both day and night hands.

The energy and financial ability exhibited by Mr. Wallace in the management of his own business have led to demands for his aid and counsel in the affairs of other institutions. Since 1864 he has been president of the Fitchburg Gas Company, since 1866 a director in the Fitchburg National Bank, and many years a director of the Putnam Machine Company. He is also a director of the Fitchburg Mutual Fire Insurance Company, a trustee of the Fitchburg Savings Bank, a director of the Fitchburg Railroad Company, a director of the Parkhill Manufacturing Company, director of the Grant Yarn Company, a trustee of Smith College, in Northampton, and trustee of the Burbank Hospital, in Fitchburg. Also president of the trustees of the Murdock Fund, Winchendon, Mass.

It is natural for such a man as Mr. Wallace to be found at times wandering in the paths of politics. It is but justice to him to say, however, that service in the political field is not congenial to his tastes, and that while he has sought no public offices he has declined many. He was a member of the Board of Selectmen of the town of Fitchburg in 1864-1865 and 1867, a representative to the General Court in 1873, a renomination for which position in the following year he declined. He was a member of the Executive Council in 1880-1881 and 1882, throughout the entire administration of Governor Long; a delegate to the National Republican Convention in 1884 which nominated James G. Blaine for the Presidency, and from 1889 to 1891 a member of Congress from the Eleventh Massachusetts District.

Mr. Wallace has shown his regard for the welfare of the inhabitants of his adopted home by the erection at a cost of \$84,000 of a library and art building, which he presented to the city and which was dedicated July 1, 1885. It is nearly a fire-proof building, built of brick, three stories high, and ninety-five feet by sixty-five on the floor. Its gift to the city was attended by the single condition that "it should be under the care and management of the Board of Trustees of the Public Library for the time being, and to be used for a free public library, reading-rooms and art gallery, and for no other purpose."

In 1894 Mr. Wallace erected in Rindge, N. H. (the native town of his first wife and where he passed his early years), a commodious library building of brick and sandstone, and June 13, 1895, presented the same to the town. It is called the "Ingalls Memorial Library," and under the deed of gift "shall be used as and for a free public library and reading-rooms, for works of art, and for educational work connected therewith, and for no other purpose."



Geo. F. Tux

Mr. Wallace married, first, December 1, 1853, Sophia, daughter of Thomas and Sophia (Shurtleff) Ingalls, of Rindge, N. H., who died June 20, 1871, leaving two sons, Herbert I. and George R. Wallace, who have been already mentioned as associated with their father in business. Mr. Wallace married, second, December 28, 1876, Sophia F., daughter of Oel and Sophia W. Billings, of Woodstock, Vt., who died November 9, 1895.

The esteem in which Mr. Wallace is held, not only by his fellow-citizens, but by all who have become familiar with his uprightness of character and sound judgment, has been illustrated by his appointment to settle large estates. No man has had better opportunities for measuring the breadth of his character and sounding its depths than the pastor of the Calvinistic Congregational Parish in Fitchburg, of which he is a member. In closing a sketch of Mr. Wallace, written in 1885, he said that he desired to add the testimony of observation and personal knowledge to the rare purity and uprightness of character, to the generosity of spirit, to the thoughtful kindness, and to the deep and reverent regard for spiritual things of his distinguished parishioner. As an example of untiring energy, of probity, of cleanness of soul, of uprightness of life, of sincerity of purpose, of firmness of moral principle, he may safely be held up as a model for young men.

GEORGE FLAGG FAY.

Moses Fay, of Southboro, was born in 1740, and died in 1819. He removed to Rutland District, which was incorporated as the town of Hutchinson in 1774, and had its name changed to Barre, in 1776. His son, Samuel, was born in Rutland District, February 4, 1772, and married, June 9, 1791, Lucy Mayo. He afterwards removed to Warwick, Mass., and to Cambridge, at which latter place he died August 6, 1851. Dennis Fay, son of Samuel, was born in Warwick January 23, 1804, and followed the occupation of a farmer. He married Adeline A. Flagg, of Holden, Mass., and died in Fitchburg in 1889. His children were: George Flagg, Lucy A., who married Alvah Crocker, of Fitchburg, and Samuel, who died young.

George Flagg Fay, son of Dennis and Adeline (Flagg) Fay, was born in Warwick, Mass., September 26, 1828. In 1831, when he was three years of age, his father removed to Lowell, and he received his education in the public schools of that city. In 1845 he went with his father to Sharon, Mass., where he was engaged with him in the lumber business. In 1849 his father opened a general country store in Royalton, Vt., and he remained there associated with him until the spring of 1852. He then removed to Fitchburg, Mass., where he was appointed to the position of ticket agent for the Fitchburg Railroad. So satisfactory was the performance of his duties that at the end of six months he was selected to take the place of general ticket agent of that road in Boston. In the spring of 1853 he was attacked with rheumatic fever, and until 1856 was prevented from engaging in any labor, and remained quietly with relatives living in Lowell. Having somewhat regained his health he reëntered his father's store in Royalton, and remained there until the spring of 1858. Feeling the need of better opportunities for advancement, he then went to Fitchburg, where he was employed as bookkeeper in the office of the paper-manufacturing firm of Crocker & Burbank. Alvah Crocker, the senior member of the firm, had married his sister, Lucy A. Fay, April 9, 1851, and knowing his business qualities felt special interest in his success. As a natural result of his efficient labors to promote the

welfare of his employers, he was admitted in 1860 a member of the firm, at the same time with Samuel E. Crocker, a nephew of Alvah Crocker. The firm then consisted of Alvah Crocker and Gardner S. Burbank, the members of the old firm of Crocker & Burbank, and Charles T. Crocker, a son of Alvah Crocker, admitted in 1855. His admission to the firm added much to its reputation and stability, and contributed largely to its increasing success. Running seven paper mills and manufacturing about twenty tons of paper daily, his knowledge of details and skill as a financier proved of inestimable benefit in maintaining and increasing the prosperity of the concern. Until his death his labors in behalf of the firm of which he was a member were unceasing, and the prosperity of the firm was unabated.

Mr. Fay was associated with other enterprises, to which he gave a portion of his time and thought. He was connected with Alvah Crocker in the development of Turner's Falls, and was a Director in the Turner's Falls Water-Power Company. He was also a Director in the John Russell Cutlery Company at Turner's Falls, and, having a large interest in the Vermont and Massachusetts Railroad, was many years either Director or President of the Company. He was a Director of the Rollstone National Bank from 1873 to 1883, and of the Fitchburg National Bank from 1883 until his death, and also a trustee for many years of the Fitchburg Savings Bank. He was appointed one of the trustees of the will of Gardner S. Burbank, who died February 7, 1888, and acted as such trustee until his death.

In politics Mr. Fay was a Republican and was active and liberal in support of his party. He was a delegate to the National Republican Convention at Minneapolis in 1892, which renominated Benjamin Harrison for the Presidency, and was a Representative to the General Court in 1881. He was also an Alderman in 1880 and 1881, and, though never seeking office, was always ready to respond to the calls of his fellow-citizens.

In religion Mr. Fay was an Episcopalian and a constant and liberal supporter of Christ Church. He was a vestryman from the organization of the parish October 7, 1863, until 1889, when he succeeded his father in the office of warden. He was treasurer of the church from 1864 to 1892, and always contributed freely, both time and money, to Christian and philanthropic enterprises. Nor was his generosity confined to public associations. His kindness of heart was proverbial, and manifested itself in quiet, unassuming ways, in obedience to the lesson of Scripture, "When thou doest alms, let not thy left hand know what thy right hand doeth." He died at his home on Wednesday, May 8, 1895, and the tenderest tributes to his memory were the tears of those who, in their poverty and suffering, had felt his helping hand.

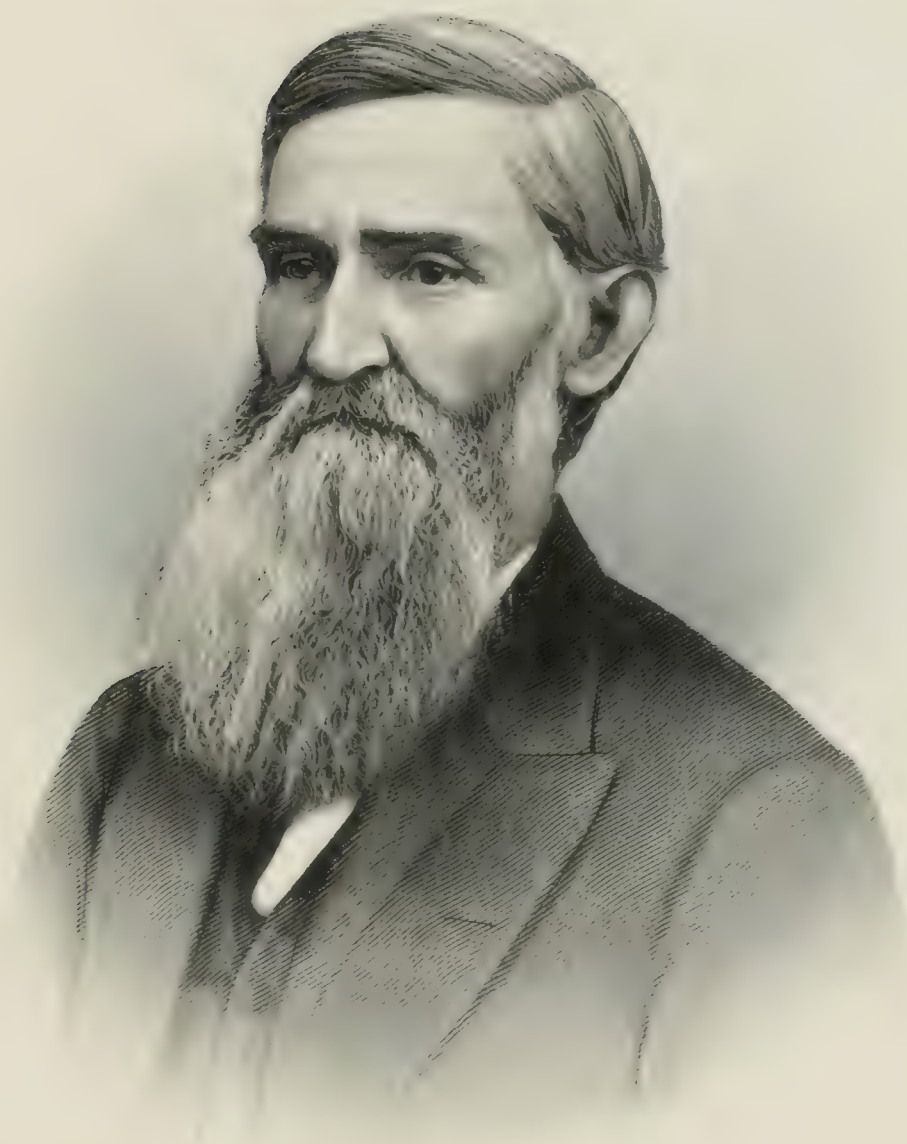
Mr. Fay married in Fitchburg Emily J., an adopted daughter of Colonel Edwin Upton of that city, October 14, 1863, who died in October, 1866, leaving two daughters, Lucy and Alice Upton. The latter died in April, 1873.

His surviving daughter, Miss Lucy Fay, occupies the homestead around which cling memories of a loving and widely respected parent.

GARDNER S. BURBANK.



BIJAH BURBANK lived in Millbury, Mass., and erected and worked the first paper mill in Worcester County, and the fourth or fifth in Massachusetts. Nearly all of his children and grandchildren became paper manufacturers. His son, Silas Burbank, removed to Montpelier, Vt., and married Bathsheba Egery. Gardner S. Burbank, son of Silas and Bathsheba (Egery) Burbank, was born in



G. S. Burbank
Fitchburg

Montpelier, July 22, 1809. He was educated in the public schools of Montpelier, and, after leaving school, began to learn the trade of paper-making in that town. In 1827 he went to Millbury, Mass., and became associated with his uncle, General Caleb Burbank, in the paper business, and remained with him seven years. He then removed to Worcester, in 1835, and operated on his own account a paper mill formerly owned by his uncle Elijah. He remained in Worcester until 1846, when he removed to Russell, Mass., and forming a partnership with Cyrus W. Field and Marshall Fales, built a paper mill, and operated it until 1851. In October of that year he retired from the firm in consequence of ill health and removed to Fitchburg. While a resident in Russell he represented the town in the General Court in 1849 and 1850. In Fitchburg he became associated in the paper business with Alvah Crocker, under the firm-name of Crocker, Burbank & Company, and remained a member of the firm fifteen years. General Leonard Burbank, a cousin of Gardner S. Burbank, had begun the manufacture of paper in a small way in Fitchburg, in 1805, but Mr. Crocker may very properly be considered the real founder of the business in that town. In 1823 Mr. Crocker entered the employ of General Burbank, and worked in a mill on the site now occupied by the Rollstone Machine Company. In 1826 he erected a paper mill on his own account in West Fitchburg, and, having overcome a series of obstacles, which would have crushed a less resolute man, had at the advent of Mr. Burbank established his business on a firm and profitable foundation. After the organization of the firm of Crocker, Burbank & Company the business of the firm steadily increased until it became the owner of seven mills, with a daily product of about twenty tons. These mills are: the Whitney Mill, built in 1847 and bought in 1868; the Hanna Mill, built in 1852 and bought in 1860; the Lyon Mill, built in 1853, and bought in 1869; the Stone Mill, built in 1854, and bought in 1871; the Snow Mill, built in 1839, and bought in 1862; the Cascade Mill, built in 1847, and bought in 1863; and the Upton Mill, built in 1851, and bought in 1859. In 1866 Mr. Burbank sold out his interest in the firm and retired from active business. At the time of his retirement the firm included among its members, besides Mr. Crocker, the senior member, his son, Charles T. Crocker, admitted in 1855, and his nephew, Samuel E. Crocker, and George F. Fay, admitted in 1860.

After his retirement Mr. Burbank devoted his time to the management of various offices of trust, and to the performance of his duties in connection with the institutions of which he was an officer. He was many years a director of the Fitchburg National Bank, a trustee and member of the Board of Investment of the Fitchburg Savings Bank, and director of the Fitchburg Mutual Fire Insurance Company.

Mr. Burbank married, first, at Auburn, Mass., May 23, 1837, Mary Sibley, who died at Worcester, December 4, 1839, leaving no children. He married, second, at Worcester, May 27, 1841, Sarah W. Grout, who is still living, having had three children: Edwin H., who died August 18, 1855, thirteen years of age; Mary J., who died August 26, 1861, sixteen years of age; and Sarah F., who married Dr. F. B. Joy, and died February 10, 1879, twenty-nine years of age.

Mr. Burbank died February 7, 1888, and his will illustrates the interest he felt in his adopted town and its people. The residuary and principal portion of his large property he placed in the hands of trustees, who were directed to pay the income to his wife during her life. He then provided that at her death the remainder should be paid to the city of Fitchburg for the founding and maintaining of a hospital for the care of the sick. He expressed a wish that a substantial and commodious building should be erected, and that the sum at least of \$100,000 be devoted

to the purchase of the necessary land and the erection of the structure. He further directed that "while those who are able to pay for the services rendered them in the hospital may be subjected to such moderate and reasonable charge as is usual in such cases in similar charitable institutions; those, on the other hand, who are in poverty and sickness shall ever be received and cared for kindly and tenderly without money and without price, and without regard to color or nationality." The generosity of his nature was beautifully displayed in the tribute to his wife in the closing words of his will, according to her the merit of the noble bequest. In anticipation of this bequest, the city has obtained authority to borrow money for the immediate establishment of the hospital, the interest on which Mrs. Burbank has generously offered to pay. The Nichols estate, consisting of about four hundred acres, has been bought, and, in anticipation of the erection of a worthy permanent structure, the buildings on the estate have been remodelled for present use. Mrs. Burbank has also contributed \$25,000 towards the erection of the Young Men's Christian Association building, which has been built on the corner of Main and Fox streets, and is a creditable addition to the architectural achievements of the city.

No words of eulogy can prolong the memory of such a man as Mr. Burbank. Long after they have been written and forgotten the Burbank Hospital will stand as a memorial of his Christian charity, and generation after generation will honor and bless him.

DIODATE LORD SWAN.

THE first American ancestor of the Swan family came to New England at an early date, and some of his descendants in the early generations removed from Massachusetts to Connecticut. Jabez Swan, the great-grandfather of the subject of this sketch, was born in Stonington, Conn., in 1750, and removed to East Haddam, Conn., in 1776. The land he bought in East Haddam is still owned by his descendants. He was a farmer of substantial character and some means, and died in his adopted town in 1824. Hurlbert Swan, son of Jabez, inherited the occupation of his father, but coming into the ownership of a large landed property, he devoted himself largely to cutting and selling ship-timber for the supply of the various ship-yards, which in the prosperous days of navigation were scattered along the shores and river banks of Connecticut. He married two wives, by one of whom, Hannah Estabrook, he had twelve children, eleven (five sons and six daughters) of whom lived to reach majority. Diodate Lord Swan, son of Hurlbert and Hannah (Estabrook) Swan, was born February 23, 1799, in East Haddam, where he carried on the business in which his father had been engaged. He married two wives, by the last of whom, Mary Eliza Wells, of Middle Haddam, he had nine children, six sons and three daughters. The oldest of these was Diodate Lord Swan, the subject of this sketch.

Mr. Swan was born in East Haddam, July 24, 1824, and was educated in the public schools of his native town, and at the academy in the adjoining town of Colchester.

At the age of eighteen years he began to learn the trade of carpenter and builder with Bliss & Stanley, an enterprising firm in Colchester, and remained with them until 1846, at which date he was twenty-two years old. During a part of his apprenticeship Bliss & Stanley were located in Middletown, to which place they had removed from Colchester, affording as it did a broader field for their business. In



D. L. Swann

1864 he removed to Springfield, Mass., where he was employed for a time by various builders until he went into business on his own account. This business he carried on for about twenty-five years, during which time he built the Episcopal Church in Chicopee, and about five hundred houses in that town and in Springfield and Longmeadow.

When he retired from the active pursuit of the trade in which he was educated he became an extensive operator in real estate. At the time of his removal to Springfield in 1846, the railroad connecting it with Boston and Albany had not been many years in operation, and the city, which now contains a population of about fifty thousand, was then, and remained for six years afterwards, a town with a population ranging from five to ten thousand. Mr. Swan was not long in coming to the conclusion that a town situated on the Connecticut River, and on the line of railroad communication of Boston with the Hudson River and the West, and destined at no distant day to be connected by rail with Chicopee, Holyoke, Northampton, Deerfield, Greenfield and other towns on the north, and with Hartford, New Haven and New York on the south, must inevitably enjoy a rapid growth and a consequent appreciation of the value of land. With that foresight and shrewdness which characterized him in all his business operations, he took advantage of the situation, and made purchases of real estate which inured, not only to his own pecuniary benefit, but also to the welfare of his adopted city and of the various institutions of which he became a benefactor.

Mr. Swan, in the course of his real-estate operations, opened up Broad street at its southerly end, and, buying the property known as Belmont Heights, laid out Euclid Avenue and Bellview Avenue. In 1873 he bought a half interest in a crockery store at the corner of Bridge street, and carried on the crockery business under the firm-name of Livermore, Swan & Co., until they were burned out in 1875. In the latter year he bought the plant of the New England Card and Paper Company, and carried on the business of the company until his death, associated with his three sons, under the firm-name of D. L. Swan & Sons.

Aside from his private business he gave little attention to the affairs of a public nature calculated to consume time, which could be more profitably employed, and to distract his mind and energies from the more personal activities in which he was engaged. In politics he only permitted himself to serve as an Alderman, representing in 1876-77-78 ward six in Springfield. The affairs of his Church he reckoned among his private concerns, calling on him for the performance of duties which he could not resist. He was a member of the State Street Baptist church and contributed generously to its funds. He gave a lot of land at the corner of Belmont Avenue and Euclid Avenue in aid of the erection of the Belmont Avenue Chapel, making it sufficiently large for the erection of a church at some time in the future.

Mr. Swan married, August 22, 1850, Lydia Jane, daughter of Richard and Lydia (Martindale) Chamberlain, of Holyoke, Mass., and had six children—Ella Jennie, born in Springfield October 16, 1851, who died; Frank Newell, born in Springfield April 4, 1854, who married Evangeline A. Clark, of Chester, Mass.; Wilbur Martindale, born July 14, 1856, who married Mary Catherine Bemis, of Chicopee, Mass.; Frederick Richard, born August 29, 1859; Leila Wells, born March 25, 1862, who married George K. Tapley, of Springfield, and Hobart Estabrook, born May 18, 1864, who is deceased. Mr. Swan died in Springfield April 13, 1859, and in an obituary published in the *Springfield Republican* it was said of him that "for more than forty years he was one of Springfield's valued and honored citizens."

CHAPTER XXX.

THE INDIA-RUBBER INDUSTRY IN NEW ENGLAND.*

BY HENRY C. PEARSON.
(Editor of *The India Rubber World*.)

THE New England states can justly claim pre-eminence in the production of the men who, by persistent toil and genius, succeeded in converting the treacherous, intractable product known as India-rubber into a "semi-metal," possessed of such rare virtues that it has become the basis of one of the most important industries in the world. Not only were the beginnings of the industry in America made in this section, but New England is to-day a greater centre of rubber-manufacturing than any other area of like extent in any country.

The early history of Caoutchouc, or India-rubber, is mainly of scientific interest, consisting of memoirs by explorers and botanists concerning the trees affording it, the uses to which it was put by the natives of the countries where it was found, and accounts of chemical experiments. The first accurate description of the rubber-tree and its product was that of Charles Marie de la Condamine, a French geographer, who explored the Amazon valley in the last century. Some account of the uses made of rubber by the natives of Brazil is given by Humboldt, and its occurrence in the East Indies was also reported at an early date, but it was more than three-quarters of a century after the publication of La Condamine's memoir (in 1751) that India-rubber began to assume the important position that it now holds in the manufacturing world.

Before going into the history of the rubber manufacture, it may be interesting to note briefly the sources of supply, with a word or two about its chemical and physical properties. Throughout the tropical belt of the world there are many varieties of trees and plants whose sap, milk-like in appearance, contains India-rubber in varying degrees of quantity and quality. While species of most of the botanical families represented grow outside of the tropics, India-rubber is obtainable for commercial purposes from none of them.

The principal sources of India-rubber, both as to quantity and quality, are in Brazil, Bolivia and Peru, among the forests bordering on the Amazon river and its tributaries. The trees producing it belong to the genus *Hevea*, of which ten species are known to botanists, and the product is known as "Para" rubber, from the name of the Brazilian port whence it is principally exported. Of the seventy-five million pounds, estimated to have been produced in the world in 1895, no less than forty-six million were shipped through Para. Colombia, Ecuador, Central America and Mexico yield a notable quantity of rubber obtained from the *Castilloa*, a forest tree

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of noble proportions. Near Pernambuco, Brazil, an inferior quality of rubber is obtained from the *Hancornia speciosa*, and known in the market as "mangabeira" rubber, from the native name of the tree. "Ceara" rubber comes from the *Manihot Glaziovii*, in another Brazilian province. Peru affords a cheap quality of rubber known commercially as "caucho"—the Spanish name for caoutchouc. The list of American rubbers is completed with a mention of "balata," found in the Guianas, which more nearly resembles gutta-percha, a gum derived from the East Indies.

Africa possesses a wide rubber-bearing belt, extending from the east to the west coast and including Madagascar, the known extent of which is constantly increasing, as well as the contributions from this source to the rubber supply of the world. Probably one-third of the whole production now comes from Africa. The plant from which this rubber is chiefly obtained is a magnificent creeper, whose stem, often six or eight inches thick, trails for hundreds of feet through the forest. The genus is known to botanists under the name *Landolphia*, and there are half a dozen species. In Borneo, Java and the Malayan Archipelago generally, a climbing plant named *Willughbeia edulis* yields rubber of inferior quality. In India, rubber is obtained from a remarkable tree. Its name is the *Ficus elastica*, and it resembles in its native habit of growth the far-famed banyan tree. The product of this tree is known as "Assam" rubber. No account need be given here of gutta-percha, which, though of such great importance in the insulation of ocean cables, and for many other purposes, has never entered largely into manufactures in New England or elsewhere in America.

The method of obtaining rubber from the tree varies in different countries. In Brazil the rubber-gatherer generally obtains the sap by gashing the bark near the base of the trunk and catching it in little cups of clay or tin placed below the incisions, after which the watery part is evaporated by holding it over a fire of palm-nuts. In India it is allowed to trickle down the trunk and dry in the sun, when it is peeled off. In parts of Africa the natives smear their bodies with the sap and peel off the rubber after the sun has dried it. In some countries the natives pursue the destructive method of cutting down the trees in order to bleed them. Generally speaking, the methods of rubber-gatherers are savagely primitive, but the difficulties of climate and of transit seem to have prevented any improvement by the introduction of laborers of a higher class. Rubber trees have been found susceptible of cultivation in most countries to which they are indigenous, though no such scarcity of rubber has yet been threatened as to lead to planting experiments on a large scale.

Chemically speaking, caoutchouc is placed under that group of organic compounds called the polyterpenes. It is insoluble in water and in alcohol, although it readily takes up the latter and swells to several times its own bulk. Ether and the essential oils dissolve it completely. It may be distilled, when it yields a heavy ill-smelling oil known as caoutchine, which is the best solvent of India-rubber known. Oil of turpentine is a good solvent, and many of the early experiments with rubber in useful applications took advantage of this fact. The peculiar construction of rubber is such as to render it quite within the bounds of possibility that it may be artificially produced, its molecular construction being what is called an open chain.

Physically, rubber is solid at ordinary temperatures, but it becomes softened at a higher heat, fuses at about 248° F., and volatilizes at 600° F. After once being liquefied by heat it cannot be brought again to a solid, but remains a useless, treacle-like mass. It is well known as a non-conductor of electricity, many of its useful applications being due to this property. Like most other non-conductors, it may be electrified by being rubbed. It may as well be said here that India-rubber is neither

a gum nor a resin, although it may contain either or both of these substances. It is a body *sui generis*, and to call it a gum is erroneous.

The early history of the importation of crude India-rubber into the United States is shrouded in some mystery. The business first attained importance in the ancient port of Salem, Mass., during the zenith of the prosperity of her shipping, when her merchant mariners yielded to none in enterprise in seeking distant markets. Some of these at an early date brought from Para, as objects of curiosity, "bottles" of India-rubber moulded upon cylinders of clay. A local tradition is that the first native Para rubber shoes were brought home by Captain Benjamin Upton—as near as can be determined, about 1824—and that merchants of the town soon saw the possibility of a demand for them. Priority in the importation of these crude rubber shoes is also claimed for Boston, one unverified account being that some were seen there as early as 1820. In a sketch of the late Thomas C. Wales, it is stated that he imported such shoes to Boston as early as 1825, and shortly afterward sent to Brazil improved forms of lasts, leading to the production of a better article of footwear. However this may have been, Salem took the lead in the Para shoe trade, although it is on record that the total output of Para rubber as late as 1828 was only forty thousand pounds.

Thomas and David Pingree, and the Uptons, all important shipping merchants of Salem, became interested in the importation of rubber, as did also Captain John Bertram and his partner, James Barr Curwen. To be sure, they were engaged in this trade only in connection with their general shipping interests, but they early appreciated the value of the gum and brought it in considerable quantities before there was an established market for it. After the merchants of Salem had found the rubber business profitable, they purchased shoe lasts and shipped them to the Amazon. On these lasts was successfully coated a fairly thick layer of rubber, the product being shipped to Salem and put on the market as the pure gum overshoe, remembered by a good many rubber men still living. Messrs. Bertram & Curwen went so far as to establish a factory at Para for the manufacture of shoes, enabling them to obtain a better quality of goods for which a market was found the world over.

The Salem trade was most active between 1820 and 1860. During this period there were four hundred and thirty-five arrivals at Salem from Para, the last being in 1861. As the rubber business increased in importance, Salem merchants established branch houses at Para, and the early exchange of cargoes of merchandise for rubber gave place to the system that still obtains of paying for rubber with bills drawn on English banks.

How great Salem's rubber trade was in these early days is not really known. Thomas Hancock, of England, furnishes some figures taken from the Para customs records, which show the rank that this city held in the rubber trade at one period. These figures cover both rubber shoes and other rubber exported from Para, though more or less of the rubber sent to Europe found its way later from Liverpool to America, much of it landing at Salem. The figures are as follows:

EXPORTED TO	1836-37.		1837-38.		1838-39.		1839-40.		1840-41.	
	Pairs Shoes.	Pounds Rubber.	Pairs Shoes.	Pounds Rubber.	Pairs Shoes.	Pounds Rubber.	Pairs Shoes.	Pounds Rubber.	Pairs Shoes.	Pounds Rubber.
Salem	69,822	27,808	97,486	20,753	77,982	8,946	96,127	18,048	141,341	49,698
New York	35,561	12,387	52,335	3,756			27,403	2,568	96,878	50,656
Boston	7,654	5,165	23,818	7,008	17,694	2,176	80,026	19,401	70,198	7,111
Europe	17,942	96,375	38,826	162,070	32,509	193,077	30,927	590,883	8,870	403,546
Total	130,979	141,735	212,463	193,587	128,185	204,199	234,483	630,900	317,287	511,011

Taking rubber shoes alone, the Para customs records for the period 1836-1856 showed the following distribution :

EXPORTED TO	PAIRS SHOES.
Salem	1,792,098
New York	1,518,532
Boston	575,904
Europe	854,741
Total	4,741,275

The last record of rubber shoes exported from Para was for the year 1853-54, when only fifteen thousand seven hundred and eighty-seven pairs were shipped to Salem. The highest number shipped to that port was in 1841-42—two hundred and thirty-nine thousand one hundred and fifteen pairs. According to the Para records, Salem retained first rank among American ports as to the amount of rubber taken of all kinds, until 1845-46, when that distinction passed to New York. But while Salem was in time surpassed as a rubber market, the Para statistics do not give an adequate idea of the extent of her total receipts of rubber. The Salem custom-house returns show, that while the activity of her importers was at its height, the following amounts of rubber were received there :

YEARS.	POUNDS.
In 1850-51	434,000
In 1851-52	1,961,000
In 1852-53	1,407,000
In 1853-54	2,056,000

The latter figure was the high-water mark, and from its date the trade rapidly declined. The houses of Corning and Bishop, in New York, had been gaining strength, being favored to some extent by the establishment of the India-rubber industry in New Jersey and in and about New York, until finally Salem was no longer heard of in the rubber world. Another New England city that had become quite important as a rubber-importing centre was New Haven. Here the shoe-manufacturing firm of L. Candee & Co., assisted with capital by the wealthy shipping firm of Hotchkiss, not only imported their own India-rubber, but sent a young man named Robert M. Everitt to Para, who later became a wealthy rubber importer in New York city. This was the beginning of the connection of the Hotchkiss family with the great rubber-shoe industry at New Haven. In 1861 rubber importing had also stopped at New Haven, and had been taken up by large firms either in Boston or in New York.

Boston has never had the importance as a receiving-port for rubber that might seem natural, in view of the great consumption of the crude material in its vicinity. During the past few years the average importations at Boston have not exceeded six per cent. of the total receipts of rubber in the United States. Yet even these figures give a yearly average of two million three hundred and sixty-six thousand and forty-five pounds. But much rubber is handled in Boston which has been first entered at New York. George A. Alden began importing rubber at Boston on his own account in August, 1855, and his firm has since remained the largest operator in this line. The late George Ropes imported considerable Madagascar rubber at Boston, while the New York house of Reimers & Meyer have also long been represented there as importers.

There is in print a statement which would indicate that India-rubber was handled at Salem at an earlier date than is above mentioned. In a deposition quoted

by George Gifford, Esq., in his argument in behalf of Horace H. Day against the extension of the Goodyear patents, it is asserted: "Abraham Fowler and William Brown, as early as the year 1812—soon after the war with Great Britain, and for three years continuously, from and after that time—were largely engaged at Salem in the manufacture of goods by the use of the composition of sulphur and rubber, using spirits of turpentine as the solvent and adding white lead to the compound. They made of it and sold large quantities of cloth; and Fowler again participated in a like use of sulphur at Lynn in 1834 and 1835." But no one familiar with the heated contests over the Goodyear patents and the recklessness of the claims made by the opposing parties will readily credit this uncorroborated testimony.

One of the earliest attempts to render caoutchouc useful was the subject of a patent taken out in England in the year 1791 by Samuel Peal, who proposed to dissolve the rubber in oil of turpentine and apply the solution, varnish-like, to the surfaces of cloth so as to render it waterproof. The project, however, never amounted to anything. The next step was taken by Charles Macintosh, of Manchester, whose name has been perpetuated by the waterproof wearing apparel he produced. The great difficulties to be overcome in the application of rubber to its proposed uses lay in the fact that its fresh surfaces have a troublesome property of sticking together. Macintosh endeavored to overcome this by putting the rubber between two layers of cloth. Yet this only admitted of limited application, and, though Thomas Hancock and William Brockedon of England toiled persistently at a solution of the problem, they failed of its achievement. It remained for a citizen of New England to solve, partly by accident, in 1839, the long-vexed question.

It is from this time that the real stirring history of rubber in New England and throughout the world begins. Something had been done before, and at one time, from 1834 to 1837, something like a South Sea bubble was experienced in this country in rubber-manufacturing. It is curious to note that the methods employed were analogous to the proposition of Peal in 1791, to render fabrics waterproof by spreading a solution of rubber in oil of turpentine upon their surfaces. Even this was not the beginning of the rubber interest in the United States. Indeed, it seemed at that time to be rather the dismal end shrouded in failure; an outcome likely to have been realized but for the efforts of a man who then seemed to be a monomaniac on the subject.

The great discoveries in regard to India-rubber—as in the case of most important inventions—resulted from the independent efforts of different men, working, more or less, unknown to each other, on the same general lines. The main object of the experimenters with rubber was to overcome certain physical characteristics which rendered it practically useless. Its property of becoming stiff and hard in cold weather and soft and sticky in warm weather, its perishable nature when brought in contact with fat, or oil, or perspiration, all rendered it disagreeable and unserviceable.

From 1791 the aim of inventors had been to discover something which could be added to the solution of rubber in oil of turpentine or other solvent so as to dry it, in the sense that painters use the term. As has been noted, Charles Macintosh got rid of the stickiness by enclosing the rubber between two layers of cloth; but that did not prevent the product from stiffening in the cold to a rigid sheet. This question of drying was for a long time attempted by adding various powders to the solution of rubber to be used in coating cloth for garments. Magnesia, sulphur, lampblack and white lead were all tried. One of them was, in reality, the thing sought, but it remained for an accident, occurring under the observation of an enthusiast, to determine the conditions of its application.

About the year 1833 the first considerable manufacture of India-rubber was begun in New England. The enterprise was undertaken by John Haskins, Edwin M. Chaffee (noteworthy as the inventor of the first rubber machinery of importance) and Luke Baldwin. These gentlemen formed a company at Roxbury, Mass., to manufacture India-rubber goods. Nathaniel Hayward, in his little pamphlet published in 1865 giving some account of his own experiments, says: "They had in some way learned the art of dissolving rubber gum, which they tried to keep a profound secret." The three gentlemen above mentioned sold their interest to a larger company called the Roxbury India-rubber Company, who continued business in the same place. "They made India-rubber cloth for carriage tops, overcoats and other articles to protect such as were obliged to be out in stormy weather." But all this, although advertised by the wearing of a suit of the new material by General Jackson, then President of the United States, at a review on Boston Common, contained within itself the germ of destruction. And although the public of Massachusetts confidently invested in the stock of the new concern in the hope of getting rich, the old story was repeated and the rubber-manufacture received a blow which laid it in the dust.

The new cloth for carriage tops attracted the attention of Nathaniel Hayward, then the proprietor of a livery establishment in Boston, and he became so imbued with curiosity and with a conviction of the great future of rubber that he sold out his livery business and devoted himself to experimenting. As a result of his observation and untiring patience his name stands second only in the list of those connected with the development of successful rubber-manufacture.

Hayward's connection with the history of India-rubber begins in the year 1834. About the beginning of the year 1836 he entered the employment of the Eagle Rubber Company, manufacturing ladies' aprons, carriage covers, etc. In April of that year this company removed their works to Woburn, Mass., and continued there for eighteen months. During this period Hayward got upon the right track of the manufacture of rubber, although, as one might say, at the very extremity of it. While endeavoring to make some white aprons he used a composition of white lead, magnesia and whiting, with equal parts of rubber, dissolved in spirits of turpentine. The result was apparently good except that the aprons when warmed would soften and stick and were not white enough. Here occurred one of those so-called accidents which at times foreshadow great results. Subjecting the aprons to the fumes of sulphur as a bleaching agent he found that they were whitened and more. It is precisely on this "more" that many a discovery has hinged. Hayward's aprons no longer softened and stuck together under the influence of warmth. Their surfaces were vulcanized to a slight extent. With characteristic penetration and patience he set about to determine the ingredients to which this effect might be ascribed, and, to quote his own words, he "found that only when sulphur was one of the ingredients of the mixture there was no melting or sticking of the rubber cloth." Had his penetration carried him a little farther—had he sought the effect of heat upon his mixture of rubber and sulphur, pushing his queries deeper and deeper, the probability is that Hayward's name would have been first on the roll of honor in this particular field. But his partial knowledge blinded him, as indeed it blinded all others, to the fact that sulphuretted rubber after becoming soft becomes hard again as the heat to which it is subjected is increased. By the autumn of 1837 the rubber business was completely prostrated and the hopes of the inventors had vanished into thin air.

Probably there were but two men in the United States whose faith in the future of the gum remained unshaken—Nathaniel Hayward and Charles Goodyear. It

was in the summer of 1838 that these two men met for the first time ; it was in the fall that Charles Goodyear received through Hayward the first intimation of the value of sulphur in the manufacture of India-rubber. The process of fumigating the rubber cloth was carried on by the two under the name of the acid-gas process. But success was not yet reached. The new process affected only the superficial layer of the cloth and decomposition of the under layers soon brought shipwreck to the sorely-tried inventors. Shortly after this, in January, 1839, the unexpected happened. Charles Goodyear, experimenting upon the effects produced by heat upon the compounds of rubber and sulphur, accidentally brought a portion of the specimen he was working with into contact with a hot stove. The experiments were evidently not directed towards ascertaining the effect of so high a heat, which was considered by Goodyear and everybody else to be fatal to rubber, however compounded. But to Goodyear's amazement the specimen did not let fall molasses-like drops to the floor. It charred, it hardened.

To the man, worn with long deferred hopes, weighed down with debt unspeakable, yet possessed by the intense zeal that ever burns in the inventor's bosom, a ray of light came down as it were through long vistas of years. The story of Charles Goodyear's life has been well told elsewhere, and its details need not be repeated here. Suffice it to say that his discovery, for it was truly his discovery by virtue of his acute inferences drawn from the charred specimens, provided the solid foundation necessary to build the rubber-manufacturing interests upon which they have since grown to such huge dimensions. The time was now at hand for the associating of the labors of three men who, working independently of each other, were yet each of them necessary to the successful manufacture of rubber.

The main work hitherto had been along the lines of dissolving the rubber and using some powder as a drier. Thomas Hancock, of England, was probably the first to commercially use the adhesive properties of pure rubber to obtain it in thin sheets. This he did by means of a machine styled by him at first "a pickle" to conceal its true character. By its means small scraps of rubber, such as the trimmings occurring in course of manufacture, were consolidated into a large homogeneous mass from which thin sheets could be cut.

Edwin M. Chaffee, in New England, obtained results similar but superior to those of Hancock by using heated rollers driven at different rates of speed. Chaffee's machine, known as the "Monster," was the forerunner of the calenders used in every rubber factory to-day. The labors of these two men, Hancock and Chaffee, working independently and three thousand miles apart, solved the question of handling rubber without bringing it into solution. The work of Charles Goodyear was the one thing needful to consummate their work and to render the manufacture of rubber an assuredly practical thing. The ground work of the rubber industry as thus laid was completed in the years 1835 to 1839.

Letters-patent were granted to Goodyear in the United States on March 9, 1844. Scarcely was the ink dry upon them when attacks of the most virulent kind were made upon his claims to the invention of vulcanized rubber. The most prominent of these came from Horace H. Day, a man who for some years had been working in rubber, along the old lines of solution and drying by sulphur or other powder. His methods were thoroughly shown in what was called "The Great India Rubber Case," in the year 1852 ; a case notable for the amount of testimony brought to bear, the exhaustive expert chemical evidence employed on both sides, and for the fee of \$25,000 paid to Daniel Webster of counsel for Goodyear—being the largest ever paid in any case up to that time. By their decision the judges set at rest for all time the question

as to Charles Goodyear's claim to be the inventor of the method of rendering rubber non-adhesive and unalterable either by heat or cold.

Goodyear's discovery of vulcanization took place in 1839, but it was some time later before he learned how to control the curing process so as to get uniform and reliable results and was prepared to apply for a patent. As we have seen, the rubber industrial interests were completely prostrated in 1837, and, as Daniel Webster said in his speech in the famous India-rubber suit, "all previous work had been utterly futile and the rubber trade had come to naught and was as though it had never been." Hayward's work, good as it was, failed to do anything to revive the defunct industry and rubber came to be a by-word and a mockery among men. But Goodyear still remained true to his belief in its future and amid almost indescribable poverty and distress struggled on to the solution of his life's problem.

The old-fashioned pure-gum shoe was at last confronted with a rival of newer make. Nathaniel Hayward claims the priority of invention in the rubber-shoe industry as we now know it. In his pamphlet he relates that Leverett Candee, of New Haven, came to his works in Woburn and asked if he could make a rubber shoe. "I told him I thought I could," says Hayward, and after some experimenting a sample lot of shoes was sent to Mr. Candee, who shortly after set up a plant for the purpose of supplying the market. Mr. Hayward soon afterwards removed to New Haven and became interested in several rubber factories, the chief among them being that erected by the Hayward Rubber Company, at Colchester, Conn. It is but fair to say that Charles Goodyear was also at this time engaged in experimenting in rubber-shoemaking, and it is said a sample of his was the one which first excited Mr. Candee's interest; a casual remark, however, by a gentleman who knew Hayward seems to have turned Mr. Candee's attention to the Woburn manufacturer and led to his making a journey thither.

Soon after establishing his invention on a sound basis Goodyear perceived that the value of his patents would be increased or that licenses to manufacture would be more salable by combining with them certain other patent-rights covering machinery necessary for the handling of rubber without first bringing it into solution. Machinery for this purpose had been invented by Thomas Hancock in 1820, being kept secret under a misleading name for a dozen years, but the patents wanted by Goodyear were those of Edwin Marcus Chaffee, who, in 1835, informed the directors of the Roxbury Rubber Co. that he could work rubber without the aid of solvents. Mr. Chaffee was directed to build the machine he had invented, and as a result produced the famous "Monster" calender. It is an instructive commentary on the vicissitudes of the rubber industry to note that this machine, built in 1836, at a cost of \$10,000, was sold at auction seven years later to John Haskins for \$3,000, and two years later still it was acquired by Goodyear, for the purposes of experiment, for \$525, its value as old iron. After that time it was long run successfully, and was in operation until quite recently at the works of the Boston Belting Co., at Roxbury, Mass. The patent-rights belonging to Mr. Chaffee were purchased by Goodyear for \$3,000, under the original contract, although that contract was superseded later by a different one, and its use was allowed to his licensees as an adjunct to his own patent, without extra charge. It has been suggested that Goodyear's simplicity of nature and honesty of purpose were well exemplified in this, as in the case where he granted licenses to manufacture rubber shoes for a royalty of a half cent per pair, when the companies might just as well have paid five cents. But it is more probable that his necessities were such as to drive him to agree to the first arrangement that promised him money, without regard to whether the terms were wholly favorable to himself.

The first licensees of Charles Goodyear were the Naugatuck Rubber Company, at Naugatuck, Conn., in 1845, a company formed by William DeForest, a wealthy woollen manufacturer, who became interested in Goodyear's work at a juncture when money in large sums was absolutely necessary to bring success to the long-extended experiments in rubber vulcanization.

About this time began that series of litigations directed against the firms who sought to reap the benefits of Goodyear's work without paying for it. They lasted seven years and were waged with all the skill known to legal practice. Probably Goodyear would have been unable, alone, to withstand the tremendous and persistent forces arrayed against him, and one of the reasons for the formation of the "Shoe Associates," by the licensees at Naugatuck and elsewhere, was that such a combination could better deal with Horace H. Day, who proved himself in this connection, as in others, one of the most skillful belligerent litigants known in this country. The questions involved more than sixty lawsuits, all of which were won, but judgment in only one was entered, that being for \$5,000 damages, the others being dropped by mutual consent.

It was stated by William Judson, of the Goodyear "Shoe Associates," that about this time Horace H. Day had offered \$25,000 to Mr. Chaffee for the extension of his patents. This offer was communicated to Mr. Judson by telegraph, with the statement that if the Goodyear people did not care to tender a like amount that Day's offer would be accepted. Mr. Judson made no reply to such a telegram, evidently intended to force the hand of the "Associates," and Mr. Chaffee announced later that he had sold his rights to Mr. Day for \$11,000. As a matter of fact, the extension was never granted. This occurred in 1850.

One year later the Goodyear licensees numbered about twenty, subjected to all manner of annoyances from infringers and having to fight their way inch by inch in upholding the standard of Goodyear's work in vulcanization. Yet, in 1852, the Trenton case was tried, and the decisions of the judge set at rest the priority of Goodyear's invention; thus giving him an honorable triumph, though almost a barren one, since the cost of litigation swallowed up his receipts from royalties. The settlement of the Trenton case brought peace into the field of the rubber industry, which from this time grew with steady pace and with fair rapidity. The history of rubber manufacturing in New England from this time was one of unparalleled expansion.

CHAPTER XXXI.

THE INDIA-RUBBER INDUSTRY IN NEW ENGLAND—Continued.



THE rubber industry early resolved itself into a business made up of special lines of manufacture in no way connected with each other. In time these natural divisions had become, in a measure, separate industries. The groupings are to-day boots and shoes, mechanical rubber goods, druggists' and surgical goods, cycle and carriage tires, waterproof clothing, insulated wire, hard rubber or vulcanite, and reclaimed rubber. All of these branches employ many men, much capital, and have great and costly manufacturing plants. In each line are men who are natural leaders, and who are at the forefront in business, in social life, in philanthropy, and in politics. In the space at the

writer's disposal, however, so great is the wealth of material that little can be done except to catalogue the various concerns in the order of their importance, with the briefest sort of formal mention of the leaders in each line.

Providence early became a centre of the rubber-shoe industry. Albert C. Eddy testified in a patent suit that before 1848 "the business was carried on more extensively in Providence than in any other place." Goodyear, who began licensing manufacturers to use his discoveries from the date of his earliest patent, and before his most important invention in 1839, granted a general license to John Haskins with a few reservations, including the grant to Dr. Isaac Hartshorn, of Providence, to use his process in the making of shoes. The industry flourished under the style of Hartshorn & Co., who later acquired the right to use Goodyear's vulcanizing process, and were still in business during the early "fifties." It was also in 1839 that George O. Bourn, a shoe-manufacturer at Providence, associated with himself David L. Winslow, for the manufacture of rubber shoes and other articles in rubber under the crude process then known. Edwin M. Chaffee and others were later associated with Bourn, and out of this early enterprise grew the Providence Rubber Co., to be mentioned further on. From first to last the goods known as the "Providence Shoe" were manufactured by Hartshorn & Co., Warring & Ware, Bourn & Brown, and E. M. Chaffee & Co. The production by Bourn amounted to two hundred and fifty to three hundred pairs per day in 1843, growing later into the thousands. With the exception of Hartshorn none of these concerns seems to have been licensed by Goodyear, and as defendants in infringement suits brought against them they claimed to have worked independently of the Goodyear process. Dr. Hartshorn had as partner Daniel Hayward, a brother of the more celebrated Nathaniel Hayward.

Nathaniel Hayward and Goodyear were early associated as experimenters, and in 1841 the former took out a license to manufacture shoes under patent, in which both he and Goodyear were interested, including any other patents which might be granted Goodyear. Hayward began making rubber shoes on his own account at Lisbon, Conn., in 1844. This business was absorbed in 1847 by the Hayward Rubber Company, having \$75,000 capital, which established a factory for rubber shoes at Colchester, Conn., with a second factory for preparing crude rubber at Bozrahville. Besides Hayward, those interested were William A. Buckingham, afterwards Governor and United States Senator, Israel M. Buckingham, James S. Carew and Henry Burr. This was for years the leading rubber shoe factory in the country, although its capacity did not exceed ten thousand pairs a day. Their goods were shown at the great Exhibition in London in 1851, and they established foreign agencies before rubber shoes were manufactured in Europe, and large numbers were exported from the United States. Hayward, while at Lisbon, had been obliged to get renewed a note for \$600 given to a Salem importer for crude rubber. He lived to see the distribution by the company at Colchester of dividends amounting in a single year to one hundred and fifty-five per cent., after setting aside one-third as much more for the sinking fund. Henry Burr, the first president, was succeeded in 1855 by Hayward, who retired from business in 1865. Lorenzo Blackstone was the third and last president. Governor Buckingham, as treasurer, had charge of the financial management from the beginning until his death in 1875. The Hayward Rubber Company closed its factories in 1885, and was succeeded in 1888 by the Colchester Rubber Company, organized with \$300,000 capital by George Watkinson, well known in the trade before as selling-agent for The L. Candee & Co. The Colchester factory was absorbed by the United States Rubber Company, and the machinery removed. Mr. Watkinson is now manufacturing rubber shoes in Philadelphia.

Leverett Candee, a manufacturer of elastic suspenders at Hampden, made rubber shoes as far back as 1843, if not earlier, for he had come into contact with both Goodyear and Hayward in the inception of the industry. He had a license from Goodyear in 1844 for three years, subsequently renewed. In 1848 Candee, in connection with the Hayward Rubber Company and certain other concerns, bought from Goodyear the right to work under his patents in making shoes, organizing a trust called the Goodyear Shoe Association, which continued so long as the Goodyear patents were in force. It included Hiram Hutchinson, who after being schooled in rubber work in New England had gone to Newark, N. J., and become a wealthy rubber manufacturer. Later he went to France and organized a rubber-shoe factory which still exists. Candee enlisted the interest of the Hotchkiss brothers, of New Haven, in which town ground was bought in 1850, and the foundation laid of the present great rubber-shoe factory of The L. Candee & Co. The plant at Hampden was given up in 1856. Henry L. Hotchkiss is now president of the corporation, with Charles L. Johnson, secretary and treasurer.

The Goodyear Metallic Rubber Shoe Company is the outgrowth of the business started at Naugatuck, Conn., in 1843, by Samuel J. Lewis & Company, working under a license from Goodyear. Two years later the existing corporation was formed with \$30,000 capital, which has been increased to \$1,000,000. Mr. Lewis was succeeded by Governor James E. English, who died in 1890, being succeeded in turn by George A. Lewis, a son of the founder. From a single small building on Rubber Avenue, the company's premises have grown to include three great plants, giving employment to fourteen hundred hands. This company was first to introduce "Arctics," the invention of Thomas C. Wales, on account of whose connection with it the company has become widely known as the "Wales-Goodyear" Shoe Company. The position of treasurer has long been filled by W. T. Rodenbach, the selling agency being in the hands of Chester J. Pike, one of the ablest marketers of rubber footwear in this country. The former superintendent of this company, Mr. E. A. Saunders, is now the general manager of the United States Rubber Company.

The Goodyear's India-Rubber Glove Manufacturing Company dates from 1844, when Brazilla Arntz began work at Litchfield, Conn. The business was incorporated in 1847, and removed to Naugatuck, where a new beginning was made in "the little red mill" on Rubber Avenue, with seven employees. The name adopted was due to a license having been acquired under the Goodyear patent to make rubber gloves, mittens and finger-cots. Gradually other lines were added, including clothing, boots and shoes, and surgical and druggists' goods. In 1881 was purchased the plant of the Phoenix Rubber Company, at Naugatuck, noted during the war for the quantity of rubber blankets produced there. Arntz, the founder, was the first president of the company, succeeded, in 1856, by George M. Allerton, and in 1882, by John D. Vermeule, who has been treasurer of the company since 1877. The capital is \$500,000. The secretary and superintendent, Mr. F. F. Shaeffer, is acknowledged as one of the most practical and able rubber men in New England.

The Boston Rubber Shoe Company was incorporated in 1853 with \$75,000 capital, succeeding some small enterprises at Malden the records of which are meagre. The first factory was in Edgeworth, a part of Malden, with a daily capacity of six hundred pairs of shoes. A second factory was built at Middlesex Fells, near Melrose, in 1883, and both have been operated ever since. The capacity is now nearly sixty thousand pairs of boots and shoes daily; twelve hundred styles and sizes of lasts are kept in stock, and more than three thousand hands are employed. The story of

this company's success cannot be told without a tribute to the energy and ability of the founder, Elisha Slade Converse, who is still at its head. Mr. Converse, from the beginning, has filled the office of treasurer and general manager, and that of president, added in 1894, on the death of James W. Converse, an elder brother, who formerly occupied the position. Four years ago the capital of the Boston Rubber-Shoe Company was increased from \$1,000,000 to \$5,000,000 by a mere transfer from the surplus funds. That the profits of the concern have been large is a matter of common knowledge. Mr. Converse, unlike many multimillionaires, has seemed to regard himself as a kind of trustee for wealth, and has most consistently used it for the benefit of others. His benefactions, though always modestly given, have been large in amount. The city of Malden has benefited greatly by his liberality, as have many worthy institutions in Boston. His gifts to Malden embrace a hospital, library, park, Y. M. C. A. building, etc.

The National India-Rubber Company, at Bristol, R. I., was incorporated in 1888 to succeed the National Rubber Company, which had fallen into financial difficulties. This company in turn had succeeded, in 1864, the old Providence Rubber Company, with which had been connected the Bourns, William W. Brown, and Chaffee. Beginning with the manufacture of shoes, the Bristol concern added clothing, mechanical rubber goods, druggists' sundries, and insulated wire. There are there now upwards of thirty buildings, occupying about eighteen acres of land. The capacity for shoes is about twenty-four thousand pairs per day, \$150,000 worth of insulated wire per year, and other goods in proportion. The offices of president and treasurer have been filled since 1888 by Col. Samuel P. Colt, whose attention was first turned to rubber when he became receiver of the old National Company. Under his management there have been regular dividends, an increase of capital, and a growing surplus. When the concern became connected with the United States Rubber Company its capital was stated at \$750,000, with \$500,000 surplus.

The Woonsocket Rubber Company had its beginning in November, 1864, when Joseph Banigan, who had become familiar with the rubber industry at Roxbury, Mass., and elsewhere, settled at Woonsocket, R. I. Securing the co-operation of Lyman A. Cook and Simeon S. Cook, he started, with \$10,000 borrowed capital, to make wringer-rolls and rubber blankets. Work was begun in an old planing-mill. They made money from the start, and soon were incorporated with \$100,000 capital. Since that time only boots and shoes have been made. The profits instead of being wholly paid out in dividends were put into new buildings and improvements. Stock dividends as high as forty per cent. were paid in some years in addition to the cash dividend of eight per cent. By 1882 there were eight hundred hands employed at high wages, when a mill was built at Millville, over the Massachusetts border, at a cost of \$750,000, without the stockholders being asked for a cent, or missing a dividend. A second mill, called the "Alice," and designed to be the largest and best equipped rubber factory in the world, was built in 1889. In the next year the capital was increased to \$2,000,000, without a cent being paid in by the stockholders. When in May, 1893, this company joined the United States Rubber Co., the reported consideration was \$300 in cash or \$540 in stock for each \$100 share of Woonsocket stock, at the option of the holders. Most of them accepted the offer of stock. Lyman A. Cook was the first president of the company, but the office soon fell to Mr. Banigan, the controlling spirit. The original machinery was set under his direction, and in the early days he superintended the manufacturing and sold all the goods. From May, 1893, to March, 1896, Mr. Banigan was elected president and general manager of the United States Rubber Co. This is a corporation formed under the laws of New

Jersey, to acquire control of the rubber-shoe industry. Its capital at present consists of \$19,400,500 in preferred and \$20,166,000 in common stock, and its purpose was achieved with regard to nearly all of the rubber-shoe factories except that of the Boston Rubber Shoe Co., the largest single concern in the business. During 1896 Mr. Banigan resigned the presidency of the United States Rubber Co., and of the Woonsocket Rubber Co., disposed of his holdings of stock, and was succeeded in the two positions by Robert D. Evans and Col. Samuel P. Colt, respectively. By the end of the year there was established a rubber-shoe factory at Olneyville, near Providence, R. I., and a charter secured for the Joseph Banigan Rubber Co., with \$1,000,000 capital, of which company Joseph Banigan is president, John J. Banigan is vice-president, and Walter S. Ballou secretary and treasurer. Mr. Banigan is also president of the American Wringer Company, organized in 1891 by a consolidation of the wringer factories, with \$2,500,000 capital. The company has a plant at Woonsocket for the manufacture of rubber wringer-rolls. Mr. Banigan is a man of great wealth and has given large sums for charitable and educational purposes.

The American Rubber Company was organized in Boston in 1872, to do a jobbing business, by Robert Evans, who has been associated with C. M. Clapp and George H. Hood, as Clapp, Evans & Co., manufacturers of clothing, carriage cloth and wringer-rolls, at Jamaica Plain, Mass. Upon the dissolution of the latter firm Mr. Evans continued the manufacture of wringer-rolls under the style of the Eagle Rubber Company, which business was consolidated in 1877 with that of the American Rubber Company, and the construction of a large factory begun at Cambridgeport. The capital, at first \$200,000, was later increased to \$1,000,000. The capacity of the plant is \$3,000,000 worth of boots and shoes per year.

In addition there is a large output of mackintoshes and rubber-surfaced garments. Robert D. Evans has been president and general manager from the first. He early co-operated in the organization of the United States Rubber Company, of which he is now president. One of his able assistants is E. H. Paine, now New York selling agent for the United States Rubber Company.

The Boston Rubber Company was formed in 1878 by George H. Hood, who has been prominently connected with the trade since 1859. A factory was established at Chelsea, Mass., in which at first wringer-rolls were largely produced. In 1880 the company bought the rubber-shoe factory of the Franklin Rubber Company, at Franklin, Mass., and introduced a new brand of footwear. In 1890 mackintoshes were added, besides which carriage cloth was made to a large extent. In 1892, when the capital was \$300,000, there was a union with the United States Rubber Company, which during 1896 closed the factories. Meanwhile the Hood Rubber Company had been organized and a factory for rubber shoes had been built at East Watertown, Mass. The officers named are F. C. Hood, treasurer, and A. N. Hood, secretary, and the capital stock is \$50,000.

The rubber shoe industry has not been without its record for failures, although of the rubber shoe companies in New England that were ever really important all still exist and each under its own name. In 1852 a selling agreement was entered into among the leaders in the rubber shoe trade, embracing the New England firms of the Hayward Rubber Company, Goodyear's Metallic Rubber Shoe Company, Leverett Candee, and Hartshorn & Co., together with the New Jersey firms. Four of these seven concerns are among the leaders in this line of manufacture to-day. A company of later date which started with unusual promise and ended in complete disaster was the Para Rubber Company, organized about 1881 by John Henry Stickney, a rubber man of much experience, who took the office of treasurer. The presi-

dency was taken by A. L. Coolidge, a business man of high standing. It had a first-class equipment in a specially-constructed plant at South Framingham, Mass., and produced excellent goods which were distributed through the best channels, but no profits were ever made. At the end of ten years the president and treasurer had died, the \$1,000,000 of capital had vanished, and the factory was closed for all time.

The Goodyear Rubber Company, whose factory is at Middletown, Conn., formerly did a large business in surfaced clothing, but to-day only make a high grade of footwear. From time to time several companies have been organized to make patented specialties in shoes. A recent instance was the Marvel Rubber Company, at Woonsocket, headed by Joseph Banigan, the business being developed by his son, William B. Banigan.

The following table is based upon an estimate, by a manufacturer, of the production of rubber shoes by each company in the United States, designed to show the proportion of goods produced by New England factories :

YEARS.	TOTAL PRODUCTION.	NEW ENGLAND PRODUCTION.
1860	\$795,000	\$525,000
1870	8,000,000	5,600,000
1880	16,000,000	12,100,000
1890	22,750,000	16,750,000

The Roxbury India-Rubber Company was incorporated in 1833 with \$30,000 capital, increased in the next year to \$240,000, and in 1835 to \$300,000. It embraced at one time or another most of the early rubber experimenters, including John Haskins, a licensee under Goodyear's patent of 1839. In 1844 the Goodyears were at work there under the name of the Goodyear Manufacturing Company. In 1845 the business was incorporated as the Boston Belting Company, although for some time the names of the proprietors were used. In 1846 these were John G. Tappan, Charles McBurney and John H. Cheever, who had obtained from Goodyear a license for making belting and other articles. In that year the company produced \$47,000 worth of goods. In July, 1878, John G. Tappan, the company's treasurer from the beginning, resigned, and was succeeded by E. S. Converse, who discovered a deficiency of \$803,000, creating a genuine sensation in rubber circles. The paid-up capital was then \$500,000, with a large surplus, and \$100 shares had sold during the year for \$175. The company was not only able to escape disaster from the loss, but its business continued to grow. The present direction is in the hands of a general manager and manufacturing agent, Mr. James Bennett Forsyth, whose life has been spent in the service of the company, and who is to-day the acknowledged central figure of the mechanical rubber business. The capital of the company is \$1,000,000, with \$600,000 surplus.

John H. Cheever left Roxbury in April, 1846, to become treasurer of a new corporation called the New York Belting and Packing Company. The first president was William Judson, long identified with Charles Goodyear as patent attorney and otherwise. He was succeeded by Henry F. Durant, of Boston, stockholder in the company, by giving his note for \$25,000, which was taken up at maturity and paid from dividends that had accrued on the stock purchased. Though his interest had practically cost him nothing, in the end he drew millions of dollars from the business. Part of his wealth was used in the founding of Wellesley College. Upon Mr. Durant's death his widow filled the office of president until 1891, when in a reorganization, it was accepted by John H. Cheever, who until that time was treasurer. The first factory occupied was one formerly used by the Goodyears at Sandy Hook (New-

town), Conn. In 1863 another factory was acquired at the same place, from Conrad Poppenhusen, a pioneer in hard rubber. Both these factories are still operated, together with one erected at Passaic, N. J., in 1883. The company is now a part of the Mechanical Rubber Company, with \$15,000,000 capital.

The Revere Rubber Company of Boston, with factories at Chelsea, Mass., began its existence in 1863 as the Elastic Fabrics Company, manufacturing rubber thread principally. In 1881 Henry C. Morse, who is now the treasurer, became connected with the company, and began the work of building it up to larger proportions. In 1883 it was reorganized as the Revere Rubber Company, with \$500,000 capital. This has been increased to \$1,500,000, and the company has become one of the largest producers of mechanical rubber goods in the world. The list of stockholders at one time included, if it does not now, the names of Joseph Banigan and Elisha S. Converse.

At the beginning of the year 1880 there was begun in a small way, in two rooms of a soap factory at Cambridge, Mass., the manufacture of rubber-lined multiple-woven cotton garden hose, of which fifteen thousand feet were produced during the year. Though it was a small beginning, so far as appearances went, the experiments which had preceded it had cost Col. Theodore A. Dodge \$150,000, and had thoroughly convinced him of the value of the loom on which Robert Cowen had been at work, in his employ, since 1873. From the outset the product proved satisfactory, and in the spring of 1884 Colonel Dodge took in another associate, J. Edwin Davis, when the business was incorporated as the Boston Woven Hose Company, with \$150,000 capital. The history of the growth of the company has been an uninterrupted record of success. To-day the output includes a general line of mechanical rubber goods, with a large production of bicycle tires. The cash capital is \$900,000, and nearly one thousand employees are at work. The company is now known as the Boston Woven Hose and Rubber Company, of which Colonel Dodge is president, Mr. Cowen, vice-president, and Mr. Davis, treasurer.

The Jenkins Rubber Company, at Holyoke, Mass., succeeded the business of the late John H. Tuttle in that town, and is engaged in the manufacture of packing for the New York firm of Jenkins Brothers.

Charles Goodyear's vulcanizing patent was dated June 15, 1844, and on July 18th he granted a broad license for its use to the Naugatuck India-rubber Company, formed in that year. In 1848 a controlling interest in the company was acquired by Jonathan Trotter, the first mayor of Brooklyn, N. Y., who individually and in connection with William Rider & Brothers, rubber manufacturers in Harlem (New York), held a license for making the goods known as druggists' sundries, army and navy equipments, etc. In November of the same year Trotter consolidated various businesses under the corporate title of the Union India-rubber Company, himself being the first president. The outbreak of the California fever gave the company a good opportunity for outfitting pioneers, of which full advantage was taken. The period of the Civil War also benefited the business, bringing orders for millions of army blankets. Attempts were made to break their monopoly in blankets, but in a suit brought against the Providence (since the National) Rubber Company, the rights of the Union Rubber Company were sustained. It may be mentioned that under various extensions, Goodyear's leading patent was valid until June 15, 1865. The company at Providence had to pay \$200,000 for infringement, in spite of which it is believed to have found its business in blankets profitable. The Union Rubber Company had its factory at Middletown, Conn., but the pressure of government orders led to the reopening of the Naugatuck factory, in 1863, under the style of the Phoenix Rubber

Company for the manufacture of blankets. This original Naugatuck factory is now owned by the India-rubber Glove Company. The Union Rubber Company still exists as a corporation, but since 1872 the business has been better known under the style of the Goodyear Rubber Company. Another name used in the business since 1857 is the Rubber Clothing Company. For many years the company had the selling agency of the National Rubber Company, and it is strongly established and one of the wealthiest in the business. At different times the company manufactured almost everything made in rubber. Its president, Frederick M. Shepard, has been with the company since 1853.

The Davidson Rubber Company, of Boston, owed its inception to the invention, by Dr. Herman E. Davidson, of the now common bulb syringe. It was improved by his brother, Charles H. Davidson, patented by him, and its manufacture begun. Before the death of the latter, in 1860, he had disposed of the business to his nephew, Hamilton D. Lockwood, under whose direction suits were brought against several infringers, who were compelled to pay large sums in damages. Until the expiration of the Goodyear patents the rubber parts of the syringes had to be bought from licensed manufacturers, but immediately afterward machinery was put up by Mr. Lockwood for making these parts. The present factory at Somerville, Mass., was erected in 1868. The business is now owned by Rhodes Lockwood and W. N. Lockwood. During all these years they have been known to the trade as the Davidson Rubber Company.

In 1866 Henry George Tyer began the manufacture of druggists' rubber goods in Andover, Mass., under his own name. Ten years later he organized the Tyer Rubber Company, of which he was president until his death in 1880. Mr. Tyer was the inventor of the white rubber now so widely used and held a caveat for it. He was the inventor and patentee of the Congress arctic, and of the double texture goring used in it. The Tyer Rubber Company, now largely expanded, is owned by the heirs, its president being Mr. Horace H. Tyer, the son of the founder.

One of the early concerns in the manufacture of druggists' sundries was the Davol Manufacturing Company, of Providence, R. I., founded by Mr. Joseph H. Davol. About fifteen years ago it was incorporated as the Davol Rubber Company. The company has always been noted for the high-grade goods turned out, and its business has grown constantly, until to-day its output is exceeded by none in its line. The president and treasurer is Mr. Joseph H. Davol, who has associated with him in the business his son, Mr. Charles J. Davol.

The Seamless Rubber Company, at New Haven, Conn., manufacturers of druggists' sundries, dates from March, 1879, starting with \$50,000 capital. It has been increased to \$100,000, with a good surplus. Joseph Banigan was the first president, succeeded in 1886 by George A. Alden. To S. F. Foote, who has been the treasurer since 1881, the success of the company has been largely due.

No other feature of rubber manufacture has grown so rapidly to a leading place as have pneumatic tires. Bicycles, at first shod with solid tires, were heavy, shaky, difficult to use and open to many objections. Finally when some bright individual conceived an idea that a man might as well ride on a cushion of air as on a cushion of rubber, the problem of strength coupled with lightness was solved, providing the cushion could be made so as to resist wear and puncture. To this task many inventors set themselves. The problem is but a few years old, and few have been sooner settled. Three classes of tires have been created: the "clincher," the inner-tube, and the single-tube tire. Of these the last two have grown to outnumber the others in America, while the reverse is the rule abroad.

The New England manufacturers had more or less to do with the double-tube and clincher tires, but with a marked preference for the single-tube or hose-pipe variety ; whereas, in that other centre, Chicago, the double-tire has held the sway. Back in the "eighties," a number of people tried to manufacture hose-pipe tires, but the idea obtained that in order to have a lively tire the several parts which gave the strength and the ability to contain air should move upon each other. This was very erroneous ; but many pairs were made before the falseness of the idea became apparent. In the winter of 1890-91 two men got an idea of how to make a good single-tube tire : A. Boothroyd, in England, and P. W. Tillinghast, in Providence, R. I. Boothroyd dedicated his invention to the public, while Tillinghast was wise enough to take out a patent. The idea was a simple one ; that a single-tube tire to possess the greatest resiliency and resistance to puncture should be one homogeneous whole, and Tillinghast, by building it up unvulcanized and then subjecting it to the process of vulcanization, produced an integral annular tire. In the two years succeeding his invention he put nearly fifty thousand pairs into use. Tillinghast's invention, however, did not strike all manufacturers at first as a useful one, and it was only after repeated experiments and failures, and the successes which grow out of such work, that a few manufacturers found that the best result could be attained in that way. Among the pioneers in New England were the Hartford Rubber Works and the Boston Woven Hose and Rubber Company, two companies that are the acknowledged leaders in the production of single-tube tires. The Tillinghast patents were first held by a company, of which the inventor of the tire was the incorporator, that had no great success in marketing them, and after they had changed owners, they drifted, in the spring of 1896, into the hands of Colonel Theodore A. Dodge, who had recognized their value in the trade, and saw in them the means for preventing the pneumatic tire business from being cut to pieces by cheap goods and undue competition. After acquiring the ownership of the patents, Dodge set at work to prove to the manufacturers that he had something of quite as much value to them as it was to him, and during the course of a year the leading manufacturers became his licensees. In order to bring them into alliance with each other as they were with him, Colonel Dodge next proceeded to organize a Rubber Tire Association. The first meeting was held in May, 1896, and in September the organization was completed at a meeting of manufacturers owning \$20,000,000 of capital and manufacturing nineteen-twentieths of all the single-tube tires in the country. The Association has continued to grow in strength and exerts a powerful and beneficial influence upon the whole tire business.

Taking the tire manufacturers in the order of their age the rubber factory of John W. Gray & Co., at Hartford, Conn., very early made solid and cushion tires for the pioneer bicycles built by the Pope Manufacturing Company. Upon the death of Mr. Gray a controlling interest in the business was bought by Colonel Albert A. Pope, and the factory enlarged as the Hartford Rubber Works and devoted to the extensive production of pneumatic-tires.

The Mechanical Fabric Company, of Providence, R. I., in whose factory all the experimenting was done for Tillinghast, made the American Dunlop, or double-tube tires, and believed in them to such an extent as not to attempt the development of the other type.

The Overman Wheel Company, at Chicopee Falls, Mass., have a plant for supplying tires for their own bicycles.

The Boston Woven Hose and Rubber Company, already mentioned, are the largest manufacturers of tires in New England.

The New York Tire Company control an extensive trade in tires made by the Revere Rubber Company, of Boston.

Other tire-manufacturing concerns are the Newton Rubber Works, at Newton Upper Falls, Mass.; the Spaulding & Pepper Company, at Chicopee Falls, Mass., and the Reading Rubber Manufacturing Company, at Reading, Mass. The Consolidated Rubber Works also manufacture tires, owning the plants of the old Chauncey Rubber Company, at Reading, Mass., and that of the Chelsea Wire Fabric Rubber Company, at Chelsea, Mass.

The manufacture of rubber clothing was developed less rapidly than any other line—that is, to thoroughly satisfactory conditions. The business began with the production of heavy clothing, followed by a period when gossamer clothing was in great vogue, after which came mackintoshes. In recent years great improvements have been made with respect to the appearance of mackintoshes, and in rendering them lighter in weight, odorless, and less liable to crack. Such success has been attained as to practically exclude imported garments from the American market.

The Union India-Rubber Company, about 1852-53, made the vulcanized, calendered, heavy surface coats. The Providence Rubber Company about that time also began to make the same goods. The Beverly Rubber Company, of Beverly, Mass., made clothing of this class, transferring the work in time to Newtown, Conn., where John H. Cheever had an interest in it. Whereupon the Union Company brought suit for infringement of their rights under Goodyear's patent, which resulted in a compromise. Upon the expiration of the patent both companies gave up the clothing business. Later gossamers came to the front and ruled the market for about five years. The mackintosh is now in the lead, in single and double textures. The manufacturers in the beginning made the mistake of copying the English method of curing double-texture goods by the vapor process, which resulted in their soon becoming stiff. They now vulcanize by the dry-heat process, and make goods that are perfect in every respect.

Lack of space makes it necessary that further reference to rubber clothing and mackintoshes be confined to mentioning the names of the companies engaged in the industry in New England. The American, National, and India-Rubber Glove Companies have been mentioned already as making clothing. The Apsley Rubber Company, at Hudson, Mass., in 1892, succeeded the Goodyear Gossamer Company, founded by Apsley & Coffin in 1885. The Gossamer Rubber Company was the pioneer in the business, and has a large factory at South Framingham, Mass. Since the death of the senior partner, Ira M. Conant, it has become the W. H. Conant Gossamer Rubber Company. There are now concerns known as the Boston Gossamer Rubber Company, with factories at Hyde Park, and the Conant Rubber Company, with factories at South Framingham, Mass. The superintendent of the latter, T. H. Videte, has done much to perfect the water-proofing of textile goods. The Cable Rubber Company was established in 1881, at Jamaica Plain, Mass., by Wheeler Cable, who is a pioneer in rubber manufacturing, and who has largely contributed to the development of a high grade of clothing and carriage cloth. Mr. Cable was the originator of the vulcanized silk-surfaced garments, which sold for \$20 when the ordinary gossamer garment had fallen in price to twenty-five cents. The Standard Rubber Corporation, at Brockton, Mass.; the Stoughton Rubber Company, at Stoughton, Mass.; the Metropolitan Rubber Company, at Wallingford, Conn.; the Franklin Rubber Company, at Malden, Mass.; the Clifton Rubber Company, at Clarendon Hills, Mass.; the Columbia Rubber Company, at East Braintree, Mass., are all important concerns, and merit more attention than space permits. The trade as a

whole is largely centred in New England, not only in proofing of fabrics, but in the weaving of them; American looms of late having turned out goods of such excellence as to render the importation of fabric no longer necessary.

Rubber thread of a high class has been long produced by three important New England factories, from which considerable is now exported to Europe. In the way of specialties an enormous business has been built up in dress-shields, in the manufacture of which several New England companies are engaged. There are also rubber factories run specially on general mould-work, mackintoshing cloth, making rubber balls, manufacturing rubber stamps on a large scale, turning out rubber pads for carriage steps, and making rubber-surfaced porous plasters. The manufacture of rubber car-springs at one time formed an important industry, which has now almost entirely closed.

The rubber machinery used in New England has been, for the greater part, manufactured in this section. Two large concerns make a specialty of this work—the Farrel Foundry and Machine Company, of Ansonia, Conn., and the Birmingham Iron Foundry, of Birmingham, Conn., besides innumerable concerns which are prepared to contribute to the equipment of a rubber mill. Considerable rubber machinery has been exported from New England to factories in all parts of Europe.

For insulation of electric wires, so long as this was confined mainly to ocean cables, gutta-percha was given the preference. But for other purposes India-rubber has been proved to be more satisfactory, besides being less expensive. The numerous modern applications of electricity have called for a steadily-increasing use of insulated wires, resulting in the establishment of many factories devoted to this specialty. In New England there are the Eastern Electric Cable Company, at Roxbury, Mass., started in 1879, in Pennsylvania; the American Electrical Works, at Providence, R. I., started in 1880 by Eugene Phillips, the present owner; William R. Brixey, Seymour, Conn., manufacturer of the “Kerite” insulation, invented by the late Austin G. Day; the insulated wire department of the National India Rubber Company, at Bristol, R. I.; the insulated wire department of the Washburn & Moen Manufacturing Company, at Worcester, Mass.; the factory of the New York Insulated Wire Company, at Wallingford, Conn.; the Crefield Electric Works, at Saylesville, R. I., and the Simplex Electrical Company, at Cambridgeport, Mass.

There was granted to Nelson Goodyear, a brother of Charles, on May 6, 1851, a patent on a new product now known as vulcanite, or hard rubber. In his patent claims, full recognition was given to the rights of Charles Goodyear as the discoverer of vulcanization, the new process being described as a supplementary one. By increasing the proportion of sulphur used, and subjecting the compound to a higher temperature, a hard substance was produced, adapted to purposes for which soft rubber could not be used. Little is now known of Nelson Goodyear, who died within a year after getting his patent. But another brother, Henry B. Goodyear, became his administrator and granted licenses under the patent to manufacturers in various lines. The validity of this patent was assailed in the courts no less vigorously than the patents of Charles Goodyear, but the cause of Goodyear invariably won. Another point of similarity was that those who were most largely benefited were the licensees, the real parties at interest in the actions brought. The invention or discovery of Nelson Goodyear was developed in the factory at Newtown, Conn. An early licensor was Conrad Poppenhusen, who established the great factory at College Point, Long Island, N. Y. Another was the Beacon Dam Company, at Beacon Dam, Conn., succeeded by the American Hard Rubber Company, and they in turn by the India Rubber Comb Company, founded by Poppenhusen and his associates. Thus the

manufacture of hard rubber, under the Goodyear patent, gradually passed from New England.

In 1858 Austin Goodyear Day, related to the Goodyears, but not to Horace H. Day, who had been manufacturing fountain pens at Seymour, Conn., under a license from Goodyear, took out a patent for hard rubber on his own account, specifying other proportions for the ingredients, and a different degree of temperature. The Poppenhusen interests brought suit for infringement against users of Day's process, and were completely successful.

The principal manufacturers of hard rubber in New England now are the Davidson Rubber Company, the Tyer Rubber Company, the Davol Rubber Company, in druggists' and surgical goods; H. P. & E. Day, of Seymour, Conn., manufacturers of fountain pens; the Johns-Pratt Company, at Hartford, Conn., manufacturers of the "Vulcabeston" compound; and the Revere Rubber Company, in electrical specialties.

New England was the birthplace of an important industry in the reclaiming of rubber from worn-out manufactured goods, and fitting it for use a second time. This was developed not long after the success of vulcanization was demonstrated. Three patents on processes for reclaiming rubber were granted in 1858 to Hiram L. Hall, of the Beverly Rubber Company, at Beverly, Mass., who used the product in the manufacture of rubber clothing. Eugene H. Clapp about 1871 began to reclaim rubber by mechanical means at Hanover, Mass., where the factory of the E. H. Clapp Rubber Company is now located. He was preceded by many experimenters in the reclaiming of rubber, but was really the man who developed the business, and who made it possible for rubber manufacturers to utilize their waste products. Mr. Clapp was a man of singular force of character and of exceptional foresight, and was reputed to be worth \$1,000,000 at his death in 1892. As the use of reclaimed rubber became general, many factories equipped reclaiming plants of their own. In 1890 title to several of the "acid" patents for rubber reclaiming was acquired by a corporation, styled the Chemical Rubber Company, which brought suit against various alleged infringers, including the Goodyear's Metallic Rubber-Shoe Company. The decisions in the courts were uniformly in favor of the defendant, it being established that the state of the art had been developed before the dates of the patents sued on. The reclaiming factory at Naugatuck is the largest and most complete in the world, and is operated by the United States Rubber Company, for supplying reclaimed rubber to all the shoe factories under its control. There is also a reclaiming factory at Derby, Conn., owned by the United States Reclaiming Company, and one at Danversport, Mass. The consumption of reclaimed rubber is now estimated to equal in weight that of new crude rubber.

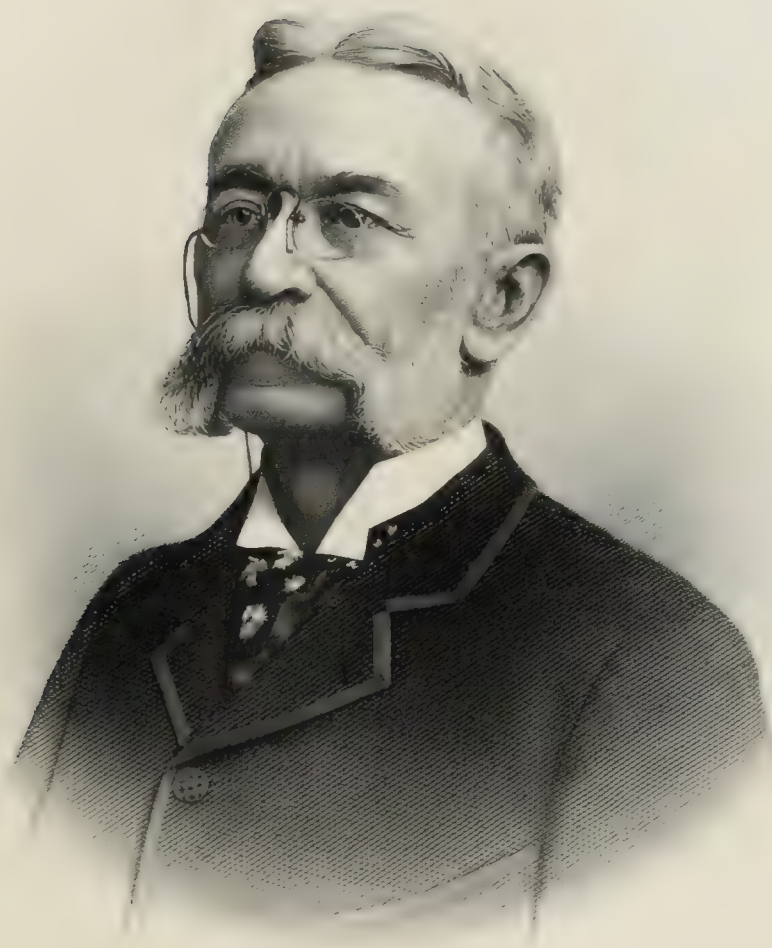
If space could be added to this chapter for a record of the superintendents and managers of the various factories, who, by their ingenuity and skill in devising new compounds, producing new articles in rubber manufacture, and in inventing rubber machinery, have contributed to the development of the industry, far more pages would be needed than the original article embraces, or than the publishers have at their disposal.

GEORGE ADELBERT ALDEN.

JOHN ALDEN was born in 1599 and came to Plymouth, Mass., in the "Mayflower" in 1620. He was married in 1621 or 1622 to Priscilla Molines, a fellow-passenger, and died September 12, 1687, in Duxbury, to which place he removed from Plymouth before 1630. Joseph Alden, the second son of the above, was born in Plymouth, in 1624, and moved to Bridgewater, where he led the life of a farmer, and died February 8, 1697. He married Mary, daughter of Moses Simmons, of Duxbury, and John, one of his sons, married Hannah, daughter of Ebenezer White, of Weymouth, and removed to Middleboro, Mass., where he died September 29, 1730. David Alden, son of the last-named John, was born in Middleboro, May 18, 1702, and married Judah Paddleford, and died August 24, 1763. Job Alden, son of David, born in Middleboro September 24, 1737, married in 1764 Lucy Spooner, and had a son, Ebenezer, born in that town September 20, 1774. Ebenezer Alden, son of the above Job, removed to Union, Maine, in 1792, and built a fine homestead, which is still in the family. He married Patience Gilmore, and died August 10, 1862. Silas Alden, son of Ebenezer, was born in Union, Maine, June 23, 1804, and removing from Union to Hope, Maine, finally, about 1834, settled in Bangor, where for many years he was engaged in the drug business, and died January 23, 1891. He married, January 28, 1828, Sarah W., daughter of Captain John W. Lindley, and had the following children: Warren Lindley, born December 30, 1828; George Adelbert, born April 7, 1830; Levi Lindley, born October 3, 1831; Silas Augustus, born June 17, 1833; Oscar Tyler, born November 18, 1835; James Edgar, born February 3, 1838; Orlando Fuller, born December 10, 1839; Sarah Louisa, born January 31, 1842; Ann Leonora, born June 4, 1843, and Sarah Melina, born October 6, 1844.

George Adelbert Alden, the second of the above children, and the subject of this sketch, was born in Hope, Maine, at the date above mentioned. He was educated in the public schools of Bangor, and after leaving school spent a short time assisting his father in the store. At the age of eighteen he entered the retail department of William B. Little & Company, druggists of Boston, and remained there until 1851, having for a time the charge of that department. After spending two years in Philadelphia, he returned to Boston and entered the employ of the same house, which had been reorganized under the firm-name of George B. Little & Company. He remained with the house as manager until August, 1855, when he established himself in business on his own account. His success was assured at the very threshold of his career, and was the result of both the favorable conditions of the special trade in which he was engaged, and the judgment and skill with which it was managed.

In 1878 Adelbert Henry Alden, his oldest son, became associated with him as partner in the firm of George A. Alden & Company. The business of the firm, which at an early date ranked among the largest handlers of India-rubber and goat skins in the country, has in later years undergone many changes and been largely increased. In 1880 the firm entered into the Shellac business, under the name of the New York Shellac Company. They control more than half of the dealings in that commodity in the United States. In 1884 the firm organized the New York Commercial Company, Limited, with a capital of \$600,000, of which Mr. Alden was made president, and his son, Adelbert Henry Alden, secretary and general manager. In December, 1892, this company was changed to the New York Commercial Com-



Wm A. Allen

pany, with a capital of \$2,500,000, of which Mr. Alden was made President, and his son, above mentioned, vice-president and general manager. This company was formed for the purpose of more extensively carrying on the importation of rubber. Before the change in the organization of the above company the importation of cocoa was added to the business in 1887, and at the present time the company is the largest importer of that article in the United States. A year later, in 1888, the business of exporting grain, petroleum, lumber, staves and rubber to Spain, Portugal, Russia, Germany and the Mediterranean ports was added to the already extensive enterprises of the firm, and two or three steamers a month are employed for this purpose. The business of the firm of George A. Alden & Company has encountered no obstacles interfering with its progress and success, and the Boston fire in 1872, by which it incurred a loss of \$100,000, brought upon it not even a temporary embarrassment. With the increasing volume of trade, though Boston, where Mr. Alden has his home, is the financial centre of the house of George A. Alden & Company, it has been found necessary to establish business offices in New York, where a considerable portion of their export and import transactions is carried on. It has been said of Mr. Alden by one who had opportunity to watch his career and to discover the traits of character which were essential to its success, that "he has long been the most prominent figure in his line of business in New England and for many years has been at the head of the largest business of its kind in the United States. It seems unnecessary to expatiate on the qualities required to accomplish the work he has performed, or to go into details in explaining his success. The best evidence of his business capacity lies in the unadorned statement of what he has accomplished. Against strong competition to have maintained and constantly strengthened the position he has so long held in commercial circles; to have successfully met and been equal to the many changing conditions of trade, exhibit better than words of adulation, however merited, the strength of character and forceful nature of the man."

Aside from the regular business of the firm of which he is the head, his services have been sought in positions of honor and trust. He is president of the Seamless Rubber Company of New Haven, a director of the National Revere Bank of Boston, of the Revere Rubber Company, the Boston Rubber Company, and the Boston Rubber Cement Company, and vice-president and treasurer of the Colonial Mutual Fire Insurance Company. He is a member of the Merchants' Club, the Boston Athletic Association, the Algonquin Club, the Temple Club, the Country Club, the Boston Art Club, Pine Tree Club, Trade Club, Exchange Club, and a life member of St. Andrew's Royal Arch Chapter, and De Molay Encampment Knights Templar. For many years he resided in Cambridge, but during the last six years his summer residence has been at Wellesley, where he owns the estate once the property of William H. Baker, containing eight hundred and fifty acres. The carriage in which Washington rode on his visit to Boston, and the coach presented to Daniel Webster, are among the appurtenances to the estate.

Mr. Alden married, April 21, 1856, Harriet J., daughter of Elijah Hadley, of Charlestown, and has two sons, Adelbert Henry, born May 8, 1857, and George Edwin, born February 28, 1859.

THEODORE AYRAULT DODGE.

THE subject of this sketch is distinguished as a soldier, scholar and business man. In the last capacity, in his association with important industrial enterprises, he finds an appropriate place in this work. This sketch, however, will do him full justice and accord to him due credit in the other, and, perhaps, more important fields in which he has labored and won success. It is not often that a man's career is exposed to the world like a prism, with each of its three sides brilliant in itself, and all combined receiving added lustre from their union. He began his mature life as a soldier, and is still borne on the register of the regular army. After being placed on the retired list he engaged in business, and has been the creator of several large and successful concerns. In middle life he has devoted his well-earned leisure to literature, and is the author of thirteen much-read volumes, in addition to parts of others, and of hundreds of articles in the leading reviews and magazines. As a military critic he is excelled by none.

Born in Pittsfield, Mass., May 28, 1842, of old New England stock, Colonel Dodge traces his lineage back on several lines to the first settlers. He is eighth in descent from William Dodge, who came to Salem in 1629. His great-great-grandfather was General Seth Pomeroy, of the French wars and of Bunker Hill fame, and his middle name comes down to him from Dr. Pierre Ayrault, who was the physician of the Newport Colony of Huguenot immigrants. In 1851 his father, N. S. Dodge, the well-known author, went to England as commissioner to the great Exhibition, and up to 1861 young Dodge was educated abroad, pursuing for four years a military course in Berlin under General von Froreich, studying at Heidelberg, and finally graduating at the University of London. He is also an LL.B. of Columbian University. He returned home in June, 1861, and enlisted in the One Hundred and First regiment, New York Volunteers, serving continuously with the Army of the Potomac under Kearny and Howard. He secured rapid promotion through every volunteer regimental rank up to colonel, was repeatedly wounded, losing a leg at Gettysburg, and was four times brevetted for gallantry. He was then ordered to duty as chief of bureau at the war department, succeeding General Ruggles, now Adjutant-General, and was given a commission in the regular army by Mr. Stanton. In 1870 he was placed on the retired list for wounds received in action.

Returning to his native state, Colonel Dodge established himself in Boston, and, as has always been permitted to regular retired officers, entered business. As treasurer of the McKay Sewing Machine Association he served several years, during which the annual dividends rose from \$250,000 to \$700,000. He then became owner of the Tapley Machine Company, which, during the life of its patents, earned and paid to shareholders some \$2,000,000. During 1872 and 1873 Colonel Dodge began the manufacture of hydraulic hose in Cambridgeport, and established the concern now known as the Boston Woven Hose and Rubber Company, whose record of success has been exceptional. In 1896 Colonel Dodge purchased the Tillinghast patents, which control the manufacture of the standard pneumatic-tires of the country, and forming the Rubber Tire Association, has persuaded all the leading manufacturers of bicycle tires in the country to join him and work together for mutual advantage. He is president of the Association, and its officers number the most prominent men in the rubber trade.

Colonel Dodge's business life has been eminently successful, but he makes the



Theodore Godse



E. Thos Sawyer

success so won subserve his literary labors. His *magnum opus* is a "History of the Art of War," better known to book-men as "Great Captains." Of this history eight volumes have been published, two each on Alexander, Hannibal, Cæsar and Gustavus Adolphus—while the four on Frederick and Napoleon, which will complete the history down to 1815, are yet in preparation. In writing his war histories, Colonel Dodge has made a practice of studying the topography of his subject on the field itself. This, added to a naturally nomadic habit, has enabled him to travel much. In writing Hannibal he crossed the Alps a score of times to determine the great Carthaginian's route; in writing Cæsar he journeyed all around the Mediterranean basin. He has crossed the Atlantic over forty times, and other seas as often; has repeatedly visited every part of Europe; has often been in the Orient, and has once gone round the globe. He is an authority on the saddle-horse, of which he is especially fond, and has studied him everywhere, from our Western plains to the Libyan and Syrian deserts. In addition to his "History of the Art of War," Colonel Dodge has published the "Campaign of Chancellorsville," a "Bird's-eye View of our Civil War," a series of Lowell Lectures, entitled "Great Captains," and two horse-books, "A Chat in the Saddle," and "Riders of Many Lands." His volumes are to be found in the majority of the leading public libraries all over the land, and some were placed in the "model library" of five thousand volumes prepared for the Chicago Exposition, and since preserved in the Congressional Library. Colonel Dodge is, or has been, a member of most of the prominent clubs in Boston; is a member of the Massachusetts Historical Society, and many other learned bodies; has been president of the Papyrus Club, and is Senior Vice-Commander of the Loyal Legion in Massachusetts.

In 1865 Colonel Dodge married a granddaughter of Chief Justice Marshall, Miss Jane Marshall Neil, who died in 1881, by whom he had five children, three of whom survive. In 1892 he married Miss Clara Isabel Bowden, who has been his collaborator in all of his books. In pursuit of his military studies, Colonel Dodge resides part of each year in Paris, where he is a constant student in the Bibliothèque Nationale, and a part of the year resides on his estate in Brookline, Mass.

EZRA THOMAS SAWYER.

IN 1650 Thomas Sawyer settled in Lancaster, Mass., and died September 12, 1706. His son, Thomas, born in 1647, died September 5, 1736. On the 26th of October, 1708, the second Thomas was taken prisoner with his son Elias, and carried to Canada. After reaching Montreal, having had some experience in running a mill, he offered to put up a mill on the Chambly river on the condition that he and his fellow-captives should be released. The Indians, however, insisted on his death, and he was tied to a stake with a view to his immediate execution. By the intercession of a friar, who claimed to hold the keys of purgatory, to which he said the executioners would surely be consigned if they carried out their plans, he was released, and, in accordance with his promise, he erected the first mill in Canada. His son, Elias, was detained for a time, and employed in teaching the art of sawing and running a mill. It is believed that since the time of Thomas the name of Sawyer has been associated with mills in every generation. The second Thomas married Mary, daughter of John Prescott, and was associated with Edward Breck, Nathaniel Hadlock, Wm. Kerler, John Prescott and Ralph Houghton on the board of prudential managers of Lancaster, Mass., on its formation as a town.

Ezra Thomas Sawyer, the subject of this sketch, is descended from Thomas Sawyer, above mentioned, and is the son of Ezra and Eliza (Houghton) Sawyer. He was born in Lancaster, January 4, 1829, and was educated in the public schools of that town. At the age of sixteen years he began to learn the machinist's trade with Otis Tufts, then located in Bromfield street, Boston, and remained with him four years. At the age of twenty he was employed to run a locomotive on the Worcester and Nashua railroad, then just completed, and for a period of seven years served as locomotive engineer on that road and the Erie and the Hudson River railroads. After leaving the service of the above roads, he was employed a year in the engineer's department of the Brooklyn navy yard, and then received the appointment as engineer on board the Vanderbilt steamer "Ariel," running between New York and Bremerhaven. After running two years in that ship, he went to Easthampton, Mass., where his brother, Edward H. Sawyer, was located as treasurer and agent of the Nashawannuck Company, and entered his employment as machinist.

In 1861, the Goodyear Elastic Fabric Company, now the Glendale Company, was organized in Easthampton, and Mr. Sawyer was appointed superintendent and general agent. Remaining in that position until 1873, he was then made treasurer of the Easthampton Rubber Thread Company, and acted in that capacity until 1891. In the latter year he was made president and general manager, and has so continued up to the present time. During his administration of the affairs of the company, covering a period of twenty years, he has paid to its stockholders an average annual dividend of sixteen and seven-tenths per cent. The company was organized in 1864, and has now a capital of four hundred thousand dollars. Aside from the offices which he holds in that company, he is a director in the First National Bank of Easthampton and in the Nashawannuck and Glendale Companies, and president of the Easthampton Gas Company.

Mr. Sawyer has been twice married. He married in Lancaster, in 1853, Caroline Woodbury, daughter of Moses Howe, of Bolton, Mass., and in 1884 in Toledo, O., Mrs. Mary E. (Monsaratt) Braisted, of Louisville, Ky. A son of Mr. Sawyer, Frank Ezra Sawyer, graduated at the Annapolis Naval Academy, and is now a lieutenant on board the United States man-of-war "Philadelphia."

The incidents in the career of Mr. Sawyer, briefly narrated in this sketch, sufficiently indicate his character. With an early education, limited to the common schools, nothing but a natural capacity inherited from a line of energetic and skillful ancestors, the fullest improvement of every opportunity for advancement, a determination to perform thoroughly every duty within the present sphere of action, an avoidance of all those distracting allurements of politics and speculation which are the shoals and rocks wrecking so many of our business men, and withal an integrity above suspicion, could have borne him along from the machinist's bench in Boston, through all the stages of his career to the responsible post he now occupies with profit and honor to himself and with remunerative returns to those whose trust he administers. With abundant means, a handsome estate, a home to which the happiest domestic relations lend their charms, and to which taste and refinement have contributed their share of grace, Mr. Sawyer is enjoying the later years of his life in well-deserved ease and content.

CHAPTER XXXII.

THE MANUFACTURE OF IRON IN NEW ENGLAND.*



THE first successful iron works in America were established in 1643 in what is now the centre village of Saugus, Mass., and here a picturesque little hamlet grew up called Hammersmith. The present town of Saugus comprised a portion of the original town of Lynn, and these iron works were generally known as the "Lynn Iron Works."

In 1632 mention is made by Morton of the existence of "iron stone" in New England, and in November, 1637, the General Court of Massachusetts granted to Abraham Shaw one-half of the benefit of any "coles or yron stone w^{ch} shal be found in any common ground w^{ch} is in the cuntryes disposing." Iron ore had been discovered in the flat meadows on the upper parts of the Saugus river, near Lynn, soon after its settlement in 1629, and in 1642 specimens were taken to London by Robert Bridges in the hope that a company might be formed for the manufacture of iron. This hope was soon realized in the formation of "The Company of Undertakers for the Iron Works," consisting of eleven English gentlemen, who advanced £1,000 to establish the works. John Winthrop, Jr., had previously gone to England, and he appears to have assisted Mr. Bridges in securing the organization of the company, becoming a member of the company, as did others among the colonists. Mr. Endicott, of Salem, in a letter to Governor Winthrop, dated December 1, 1642, says: "I want much to hear from your son's iron and steel." Thomas Dexter and Robert Bridges, both of Lynn, were among the original promoters of the enterprise. In his *History of Lynn* (1844) Alonzo Lewis says that in 1643 "Mr. John Winthrop, Jr., came from England with workmen and stock to the amount of one thousand pounds for commencing the work. A foundry was erected on the western bank of Saugus river. The village at the foundry was called Hammersmith by some of the principal workmen, who came from a place of that name in England." In Newhall's revision of Lewis's history, published in 1865, the iron works are said to have been located near the site of the present woollen factories in Saugus Centre, not far from Lynn, where large heaps of scoria are still to be seen. "This iron foundry at Lynn," says Lewis, "was the first which was established in America." Iron is not now manufactured at or near Lynn, except in its secondary forms. There are here large iron

*The following chapter on the Manufacture of Iron in New England is taken by permission from James M. Swank's work entitled, "Iron in All Ages," an elaborate and exhaustive publication.

In the collection of the materials for his work, Mr. Swank was exceedingly fortunate in possessing a personal acquaintance with most of the leading actors in the wonderful development of our American iron industry during the present century, and in learning from their own lips and their own letters many of the incidents of that development.

Mr. Swank is secretary and general manager of the American Iron and Steel Association.

foundries, and also wire works, nail works, and various other iron enterprises of a reproductive character.

In 1644 and subsequently, as stated by Lewis, the General Court granted many special privileges to the company. On March 7, 1644, it was granted three miles square of land at each of six places it might occupy in the prosecution of its business. On November 13, 1644, it was allowed three years "for y^e perfecting of their worke and furnishing of y^e country with all sorts of barr iron." The citizens were granted liberty to take stock in the enterprise "if they would complete the finery and forge, as well as the furnace, which is already set up." On May 14, 1645, the General Court passed an order declaring that "y^e iron worke is very successful (both in y^e richness of y^e ore and y^e goodness of y^e iron)," and that between £1,200 and £1,500 had been disbursed, "with which y^e furnace is built, with that which belongeth to it, . . . and some tuns of sowe iron cast in readiness for y^e forge. . . . There will be neede of some £1,500 to finish y^e forge." On October 14th, of the same year, the company was granted still further privileges by the General Court, on the condition "that the inhabitants of this jurisdiction be furnished with barr iron of all sorts for their use, not exceeding twentye pounds per tunn," and that the grants of land already made should be used "for the building and setting up of six forges, or furnaces, and not bloomaries onely." The grant was confirmed to the company of the free use of all materials "for making or moulding any manner of gunnes, potts, and all other cast-iron ware." On May 6, 1646, Richard Leader, the general agent of the company, who is described as being a man of superior ability, purchased "some of the country's gunnes to melt over at the foundry." On August 4, 1648, Governor Winthrop wrote from Boston to his son, who had removed to Pequod, Conn., that "the iron work goeth on with more hope. It yields now about seven tons per week." On September 30th he writes again: "The furnace runs eight tons per week, and their bar iron is as good as Spanish."

Newhall quotes from a Lynn account book for 1651 the following entry: "James Leonnarde, 15 days worke about finnerey chimneye and other worke in y^e forge, 1 : 13 : 0. To ditto Leonard for dressing his bellows 3 times, 1 : 10 : 0." Edward Johnson, of Woburn, in describing Lynn in 1652, in his *Wonder Working Providence*, printed in 1654, says that "there is also an iron mill in constant use;" and Mr. Lewis states that, prior to 1671, "the iron works for several years were carried on with vigor, and furnished most of the iron used in the colony." After 1671 they were fitfully operated, and about 1688 they appear to have been finally abandoned. Their owners were harassed after 1651 with frequent lawsuits, arising from the overflow of the water in the dam. The fear that the works would create a scarcity of timber also appears to have added to their unpopularity. Rev. William Hubbard, in his *Present State of New England*, printed in 1677, says that "a work was set up at Lynn upon a very commodious stream, which was very much promoted and strenuously carried on for some time, but at length, instead of drawing out bars of iron for the country's use, there was hammered out nothing but contentions and lawsuits."

From the foregoing details it is plainly established that the enterprise at Lynn embraced a blast furnace, or "foundry," and a refinery forge. The term foundry was long a synonym for furnace, castings being made directly from the furnace, as has been previously stated. This usage continued in this country down to about the middle of the present century, and it is still followed in some European countries. That the furnace was in operation in May, 1645, is certain, and that the forge was in operation in September, 1648, is equally certain. These dates may be accepted as

definitely determining, respectively, the first successful attempts in this country to make "sowe iron" and other castings in a blast furnace and to make "barr iron" in a refinery forge from "sowe iron."

Mr. Nathan M. Hawkes, of Lynn, furnished to the *Magazine of American History* for November, 1889, the following description of the exact site of the Lynn iron works:

Midway between Salem and Boston, the first and second capitals of Massachusetts, there flows a serpentine little stream called the Saugus by the Indians and their English successors. Tide-water meets the down-flowing fresh water two miles from the bay, between Round Hill on the west and the dark forest on the east. Just where the currents lap each other on the bank of the stream is a long sloping mound like a sea-serpent's back, which to the passer-by seems but a freak of nature. The hand of man, however, wrought that earth-work. At this point was the upper ferry crossed in the early days by Endicott and Winthrop and all the Puritan worthies in the infancy of New England. The mound which lies at this point upon the river-bank, and is known to the natives as "the cinder banks," is the heaped-up scoria—the refuse, the remainder, the sweepings of an iron foundry which was in full blast before the red man had cast his last lingering look upon his beloved river and upon the blue waters of the Atlantic beyond. The fleecy snows have mantled it, the sun has scorched it for two centuries, and only an occasional curious observer has disturbed its scanty covering of vegetation for some relic of the first manufacturing industry of the continent.

The bog ore was largely taken from the meadows of the farms of Mr. Adam Hawkes, two miles north of the works. Mr. Hawkes furnished the ore, and he was also the persistent plaintiff in many suits against the company for flowing his lands. It is an interesting fact that, while the Puritans abandoned all the mother country restrictions concerning the conveyance of land, these fields that became the property of Adam Hawkes, and the site where he built his first house, about 1630, have never been alienated from his family, but are still occupied by his lineal descendants, and are yet in the same name. This tenacity of holding is an English trait, but it is rare even in New England to witness a land tenure so long unbroken.

Joseph Jenks was a machinist at the Lynn works, who had come from Hammer-smith, in England, and was a man of much skill and inventive genius. He prepared the moulds for the first castings that were made at Lynn. "A small iron pot, capable of containing about one quart," was the first article cast at the furnace. In 1844 it was in the possession of Mr. Lewis's mother, who was a lineal descendant of Thomas Hudson, the first owner of the lands on Saugus river, on which the iron works were built, and who obtained possession of the pot immediately after it was cast, "which he preserved as a curiosity." "It has been handed down in the family ever since," wrote Mr. Lewis in 1844. Mr. C. M. Tracy, of Lynn, writes us in 1890 that by some carelessness years ago one leg of the pot was broken off, when a leaden one was made and clumsily substituted, but the remainder of the pot "is perfect to-day." "It is of the old dinner-pot pattern," adds Mr. Tracy, "and, although holding only about a quart, is heavy enough to make three in the hands of a modern founder." This first iron utensil cast in this country is now in the possession of two sons of Alonzo Lewis, residing at Etna Place, Lynn. Their names are Llewellyn and Arthur Lewis.

Joseph Jenks, who became the founder of a noted New England family, purchased from Richard Leader on January 20, 1647, the privilege of building a forge at the Lynn iron works for the manufacture of scythes and other edge tools. This enterprise was successful. In 1652 he made at these iron works, for the mint which was that year established at Boston, the dies for the first silver pieces coined in New England. On one side of these coins was the impression of a pine tree; hence the name by which they have since been known, "pine-tree shillings." In 1654 he made for the city of Boston the first fire engine made in America. In 1655 the Gen-

eral Court granted him a patent for an improved scythe. His name is also associated with other inventions. He died in 1683. Mr. Hawkes says of the scythe which he invented: "This improvement consisted in lengthening the blade, making it thinner, and welding a square bar on the back to strengthen it, as in the scythe of to-day. Before this the old English blade was short and thick like a bush scythe. This invention lightened the labor and cheered the hearts of merry mowers till the mowing machine of our day superseded the old emblem of the husbandman."

Henry and James Leonard were also skilled workmen at Lynn. They and their descendants were afterwards identified with many colonial iron enterprises. The family name is the most noted in the annals of the New England iron industry. Rev. Dr. Fobes, in referring to the Leonard family in his *Topographical Description of Raynham, with its History*, written in 1793, says that "the circumstance of a family attachment to the iron manufacture is so well known as to render it a common observation in this part of the country, 'Where you can find iron works there you will find a Leonard.'" Henry and James Leonard are said to have learned their trade at Pontypool, in Monmouthshire. They were forgers.

The second iron enterprise that was undertaken in New England embraced a furnace and forge at Braintree, in Norfolk county, about ten miles south of Boston. The works at Lynn and Braintree belonged to the same company. Bishop says that on the 19th of November, 1643, a grant of 3,000 acres of the common land at Braintree was made to Mr. Winthrop and his partners, the Lynn Company, "for the encouragement of an iron work to be set up about Monotcot river." The true spelling of the name of this river is Monontocot. But this grant, according to Lewis, was not surveyed until January 11, 1648. On the 29th of September, 1645, as stated by Lewis, the first purchase of land, consisting of twenty acres "for a forge at Braintree," was made from George Ruggles by Richard Leader, who was the general agent for the company of undertakers. The furnace was probably built in 1646. Robert Child, writing from Boston on the 15th of March, 1647, to John Winthrop, Jr., "at Pequot river," says of the Lynn and Braintree enterprises: "We have cast this winter some tuns of pots, likewise mortars, stoves, skillets. Our potter is moulding more at Brayntree as yet, which place after another blowing we shall quit, not finding mine there." We find, however, that iron ore was mined at Braintree in the early part of 1652, and that on the 28th of September of that year it was proposed at London on behalf of the undertakers to employ William Osborne at "Brantry furnas & forges." Operations at the works were suspended in 1653, owing to the scarcity of ore. Henry Leonard is said to have superintended the erection of the Braintree works, although James Leonard was certainly connected with them, residing at Braintree in 1653, when he removed to Taunton. John Gifford was the manager of the Braintree works, according to Newhall. In 1651 he succeeded Richard Leader as the agent for the works at Lynn. John Adams and his son, John Quincy Adams, were both natives of Braintree.

The next iron enterprise in New England was located in the town, or township, of Taunton (now Raynham), in Bristol county, two miles from the city of Taunton. This enterprise was undertaken in 1652 by a company composed of citizens of Taunton, who employed Henry and James Leonard and Ralph Russell as practical iron-workers. At a town meeting at Taunton, held October 21, 1652, "it was agreed and granted by the town to the said Henry Leonard and James Leonard, his brother, and Ralph Russell free consent to come hither and join with certain of our inhabitants to set up a bloomery work on the Two-mile river." The works thus projected were put in operation in 1656. These works, which must be called the Taunton forge,

are referred to by Lewis as "Leonards' celebrated iron works." But the Leonards contributed nothing toward their erection except their skill as iron-workers, James Leonard owning but half a share in the stock of the company and his brother not being a stockholder at all. George Hall was the first clerk and manager, which position he held almost continuously until his death in 1669. His successors were John Hall and others until 1683, when Captain Thomas Leonard became the manager, and so continued until his death in 1713. The forge long continued in a prosperous condition. Bar iron was made directly from the ore. As Henry Leonard was again at Lynn in 1655, and as James Leonard does not appear to have been there after 1652, it is certain that the latter and his sons and descendants were the only Leonards who became completely identified with the active operations of the Taunton forge. The Leonards long continued their connection with the Taunton works as master workmen. Ralph Russell did not remain at Taunton, and is said to have established a forge at Russell's Mills, "which place received its name from him."

There seems to have existed a strong bond of friendship between James Leonard and King Philip, the sachem of the Wampanoags. Elisha Clarke Leonard, in an address in 1886 before the Old Colony Historical Society, at Taunton, fully proves that in 1665 Philip gave to James Leonard the deed for a neck of land embracing about one hundred and fifty acres, "lying by Mr. Brinton's land at Matapoyset, being bounded on each side by a brook," it being the intention of Mr. Leonard to "set up a mill or iron work if occasion were." But the deed was not confirmed by the colonial authorities, and Mr. Leonard was deprived of the Indian's gift.

In an address read before the Old Colony Historical Society, at Taunton, in July, 1884, Captain J. W. D. Hall said that the hammers and other heavy iron machinery for the Taunton "bloomerie" came from abroad; also that, on the division of Taunton in 1731, the iron works were included in the new town of Raynham. He also said that "the works made from twenty to thirty tons annually, which brought from £400 to £675, averaging about \$100 a ton of our currency. About a year ago the old buildings were demolished, and the privilege, dam, and foundation walls alone remain of the ancient Taunton iron works of two hundred and twenty-four years—the oldest successful iron manufactory in New England."

The Taunton forge, says Fobes, in 1793, was situated on "the great road, and, having been repaired from generation to generation, it is to this day still in employ." In William Read Deane's *Genealogical Record of the Leonard Family*, published in 1851, it is stated that "the old forge, though it has been several times remodeled, has been in constant use for nearly two hundred years, and is now in the full tide of successful operation. It is owned by Theodore Dean, Esq., who is descended from the Leonards." The forge was at that time employed in the manufacture of anchors. In 1865 it was still so employed with four forge fires, two hammers, and two water-wheels, but about that time it ceased to be active and has since been abandoned and dismantled.

In 1657 the General Court of Massachusetts, owing to the failure of the undertakers at Lynn and Braintree to furnish the colony with a constant supply of iron, "whereby unsufferable damage may accrew," granted to the inhabitants of Concord and Lancaster, and such as they should associate with them, "liberty to erect one or more iron workes within the limitts of their owne towne bounds, or in any common place neere thereunto." That this grant resulted in the establishment of iron works at Concord appears probable from the grant by the court in 1660, to "y^e company in partnership in the iron worke at Concord," of "free liberty to digg mine without molestation in any lands now in the court's possession."

About 1668 Henry Leonard went to Rowley village, twenty-five miles northeast of Lynn, as stated by Newhall, "and there established iron works." Lewis says that in 1674 Henry Leonard's sons, Nathaniel, Samuel and Thomas, contracted to carry on these works for the owners, whose names are given by Bishop as "John Ruck and others of Salem." The works did not prove to be profitable. After establishing the Rowley works Henry Leonard went to New Jersey, "and there again engaged in the iron manufacture." At some time previous to his removal to New Jersey he appears to have been connected with the establishment of iron works at Canton, about fourteen miles south of Boston.

Other iron enterprises in Massachusetts speedily followed those that have been mentioned. In 1677 one of these works, the name of which has not come down to us, was destroyed by the Indians. About the same year iron was made at Topsfield, near Ipswich, and in 1680 its manufacture was commenced at Boxford. Hubbard, writing about 1677, says that at that time there were in the colonies "many convenient places, where very good iron, not much inferior to that of Bilbao, may be produced, as at this day is seen in a village near Topsfield, seven or eight miles west from Ipswich." Mr. Tracy, however, informs us that there is a tradition that the Topsfield works were never very productive.

From the address of Captain Hall we glean the following additional information concerning early Taunton iron works: Whittington Iron Works, on Mill river, were built by James Leonard, senior, "forgeman," in 1670. These works embraced a "bloomerie with one hearth." Mr. Leonard's three sons, Joseph, Benjamin and Uriah, having served in the Taunton Iron Works at the "refining and bloomerie" trade, worked the forge. They also had a grist mill at the same place. Captain Hall says that "this was the location of James Leonard's iron works." James Leonard died in 1691. The Whittington bloomery was continued by his sons and by their successors for more than a hundred years. During the first fifty years it was supplied with bog ore mined in the vicinity of "Scadding's moire" and pond, and "along up Mill river to Winneconnet pond."

In the years 1696 and 1697 the Chartley Iron Works were built on Stony brook, within the limits of Taunton North Purchase. "The iron-work and tools required were made at the Taunton iron works." These works were built by Thomas and James Leonard, and embraced only a bloomery for the manufacture of bar iron. They went into operation in 1698. In 1713 George Leonard became the sole owner of these works and greatly enlarged them. The above enterprise was the origin of the noted Leonard Iron Works of Norton, and one of the chief causes of the organization and incorporation of that town in 1711. Native bog ore was always used.

A small forge, or "bloomerie," to use bog ore, was built about 1695 "at Taunton line, on Three-mile river, near the present site of North Dighton furnace," by Richard Stephens, "in connection with his son and others." In 1739 these works were enlarged. They appear to have been kept in operation until near the close of the eighteenth century.

"The first hollow-ware manufactory" in the old colony of New Plymouth was King's furnace, built on Littleworth brook, in the eastern part of Taunton, in 1724 and 1725, by a stock company of which John King was the principal member; hence the name, King's Furnace. In 1725 the casting of hollow-ware was commenced, from the size of a pint kettle to a ten-pail cauldron. The ore first used was bog ore found in the neighborhood. This furnace was a successful enterprise. It was rebuilt in 1816, when it "employed about thirty moulders and men, doing a large business." Its wares were even transported to New York "by sloops at Weir village, which on

their return brought pig iron and ore from New Jersey." The furnace was in operation for several years after 1839.

The Hopewell Iron Works, embracing a bloomery only, were built on Mill river, in Taunton, in 1739 and 1740, by Captain Zephaniah Leonard, to make bar iron from bog ore. The bloomery was succeeded by a rolling and slitting mill, erected by John Adams in 1776 and 1777. In 1782 the property passed into the hands of Samuel Leonard and others, of Taunton. Captain Hall says that "Russia and Swede iron, imported in bars, were rolled and converted into rods for the best of hammered nails, furnishing partial employment for many farmer nailers within an area of a dozen miles. Finally, the business proving unprofitable, the works were abandoned." We pass over other early Taunton iron works.

For a hundred years after its settlement in 1620 Massachusetts was the chief seat of the iron manufacture on this continent. Most of its iron enterprises during this hundred years were ore bloomeries, but there were blast furnaces also, although the latter, as a rule, produced only hollow-ware and other castings, and not pig iron. During the period mentioned the iron industry of Massachusetts was confined to the eastern counties of the colony, where bog and pond ores formed the only kinds of ore that were obtainable. Charcoal was the only fuel used, and water-power was the only power employed.

The English settlement at New Haven closely followed Massachusetts in the manufacture of iron. John Winthrop, Jr., who removed from Lynn to Pequod (New London), Connecticut, in 1645, had obtained from the General Court in the preceding year permission to set up an iron work, and in 1651 he obtained a grant of certain privileges to enable him to "adventure" in the manufacture of iron; but he does not seem to have embarked in the iron business until some time subsequently. On May 30, 1655, as we learn from Bishop, it was ordered by the assembly of New Haven "that, if an iron worke goe on within any part of this jurisdiction, the persons and estates constantly and onely imployed in that worke shall be free from paying rates." In 1658 Captain Thomas Clarke, in company with John Winthrop and others, put in operation an "iron worke" at New Haven, and in 1669 he seems to have been still engaged in the same enterprise, for in that year the General Court of Connecticut continued the exemption already noted for another seven years, "for encouragement of the said worke in supplying the country with good iron, and well wrought according to art." This enterprise embraced a blast furnace and a refinery forge. On the 22d of June, 1663, John Davenport wrote from New Haven to John Winthrop, Jr., as follows: "The freshest newes here, & that which is *e re vestra*, is that they have bene blowing at the iron worke, and have runne, from the last 6th day to this 2d day, 5 sowes of iron, which are commended for very good; & this night it's thought they will run another, & begin to-morrow to make pots. The worke is hopeful, but the workemen are thought to be very chargeable and froward." This frowardness was due apparently to the influence of an old enemy of iron works and iron-workers, John Barleycorn. Bishop records "a proposition made in May, 1662, 'in y^e behalfe of Capt. Clarke, that wine and liquors drawn at the iron workes might be custome free,' which was allowed to the extent of one butt of wine and one barrell of liquors, and no more."

Rhode Island made iron soon after its settlement in 1636, certainly at Pawtucket and elsewhere as early as 1675, when a forge at Pawtucket, erected by Joseph Jenks, Jr., son of Joseph Jenks, the machinist at Lynn, was destroyed by the Indians in the Wampanoag war, as well as other iron works and infant enterprises. A third Joseph Jenks was Governor of Rhode Island from 1727 to 1732. The few iron enterprises

that were established in this colony in the seventeenth century used bog or pond ore, but in the succeeding century rock ore was also used. There is a deposit of magnetic iron ore in Cumberland township, known as Cumberland hill. This hill, or mountain, is described as forming "a homogeneous mass of iron ore about five hundred feet long by one hundred and fifty feet wide and one hundred and four feet high, or, in bulk, equal to about one million tons above water level, while, as the deposit shows an indefinite extension in depth, the quantity of this ore may be said to be practically inexhaustible." Hematite ore was found at Cranston.

Iron does not appear to have been made within the limits of Maine, New Hampshire or Vermont until the eighteenth century.

In his valuable essay on the iron ores and iron enterprises of Plymouth county, Mass., printed in 1804, Dr. James Thacher says: "The first furnace for smelting iron ore known in the county of Plymouth, was erected in the year 1702 by Lambert Despard (a founder) and the family of Barkers, his associates, at the mouth of Mattakeeset pond in the town of Pembroke, but the wood in the vicinity being exhausted, the works were long since abandoned." In James Torrey's *History of Scituate*, in Plymouth county, written in 1815, mention is made of an iron enterprise in the township of Scituate, as follows: "In 1648 Mr. Timothy Hatherly, the principal founder and father of the town of Scituate, requested liberty of the colony to erect an iron mill. It was granted in 1650, conditional to be erected within three years, or the privilege, certain woodlands about Mattakeeset pond (now Pembroke) to revert to the colony. It did not, however, take place at that period, but 'a smelting furnace was erected on the precise grant by Mark Despard and the family of Barker about 1702.'" The enterprise of Despard and the Barkers was speedily followed by the erection of a bloomary forge on Bound Brook, near Hingham, in 1703, by a company in which two brothers, Daniel and Mordecai Lincoln, were partners. In Torrey's *History of Scituate* mention is made of the erection of the Drinkwater Iron Works near Abington, about 1710, by a person named Mighill, probably Rev. Thomas Mighill. Hingham and Abington are both in Plymouth county.

About 1722 a bloomary forge was built at Bridgewater, which was active in 1750. In 1738 Hugh Orr, a Scotchman, established at this place a gun factory, and about 1748 he made five hundred muskets for the province of Massachusetts Bay, which are claimed to have been the first muskets manufactured in this country. Subsequently he established a cast-iron cannon foundry at Bridgewater, and was instrumental in promoting various other manufacturing enterprises. In 1730 iron works were erected at Plympton, now Carver, which appear to have embraced a blast furnace, as mention is made of "the first cast-iron tea-kettle" having been cast at Plympton between 1760 and 1765. Bishop says: "That important utensil had been previously made of wrought iron, and was imported from England. A copper tea-kettle was first used at Plymouth, whence Carver was chiefly settled, in 1702."

The first slitting-mill in the colonies for slitting nail rods is said by tradition to have been erected at Milton, in Norfolk county, as early as 1710. Bishop accords this honor to Middleborough, in Plymouth county, at a later day, but he does not give the date of its erection, except to indicate by the context that it was built before 1750. We have in our possession a very excellent draft of a slitting-mill at Middleborough, which is said to have been built by Judge Peter Oliver in 1751, and which was abandoned in 1830. This draft is by William H. Harrison, of Braintree, Mass. It may be found reproduced in the *Transactions* of the American Society of Mechanical Engineers for 1881.

Mr. Tracy writes to us that in the old records of Essex county, Mass., is this

surprising undated entry, inserted between two other entries dated May 20th and June 17th, 1650: "A caveat is recorded of y^e sale of y^e slitting mill in Lyn by Rich^d Ledder for tenn powndes to Capt. Will^m Hathorne."

In 1731 there were officially reported to be in Massachusetts "several forges for making bar-iron, and some furnaces for cast-iron or hollow-ware, and one slitting-mill, and a manufacture for nails." The slitting-mill referred to was located at either Milton or Middleborough. At the same time there were in all New England "six furnaces, meaning hollow-ware furnaces, and nineteen forges, meaning bloomaries, not refineries." "At that time," says Douglass, in his *British Settlements*, "we had no pig furnaces nor refineries of pigs" in New England. Refineries were in use about twenty years later.

There were officially reported to be four slitting-mills in Massachusetts in 1750—two at Middleborough, one at Hanover, and one at Milton; also a plating-forge with a tilt-hammer, and one steel furnace. In 1750 Douglass thus described the iron industry of New England:

Iron is a considerable article in our manufacture; it consists of these general branches: (1) Smelting furnaces reducing the ore into pigs; having coal enough and appearances of rock ore. In Attleborough were erected at a great charge three furnaces, but the ore proving bad and scarce this projection miscarried as to pigs. They were of use in casting of small cannon for ships of letters of marque, and in casting cannon-balls and bombs toward the reduction of Louisbourg. (2) Refineries which manufacture pigs, imported from New York, Pennsylvania, and Maryland furnaces, into bar iron. (3) Bloomaries, which, from bog or swamp ore, without any furnace, only by a forge hearth, reduce it into a bloom or semi-liquidated lump to be beat into bars, but much inferior to those from the pigs or refineries. (4) Swamp ore furnaces; from that ore smelted they cast hollow-ware which we can afford cheaper than from England or Holland.

Bog or swamp ore lies from half a foot to two feet deep. In about twenty years from digging it grows or gathers fit for another digging; if it lies longer it turns rusty and does not yield well. Three tons of swamp ore yield about one ton of hollow-ware. One hundred and twenty bushels of charcoal are sufficient to smelt rock ore into one ton of pigs. The complement of men for a furnace is eight or nine, besides cutters of wood, coalers, carters, and other common laborers.

In New England we have two slitting mills for nail rods; one in Milton, eight miles from Boston, and another in Middleborough, about thirty miles from Boston, which are more than we have occasion for. Our nailors can afford spikes and large nails cheaper than from England, but small nails not so cheap.

In New England they do not forge bar iron sufficient for their home consumption by bloomaries and refineries; they import from England, New York, Jerseys, Pennsylvania and Maryland.

The development of the rich brown hematite iron ores of western Massachusetts commenced about 1750. It is said, however, that as early as 1731 iron ore was taken on horseback in leather bags to Ousatonic, now Great Barrington, in Berkshire county, from Old Hill mine, in Litchfield county, Conn., a distance of sixteen miles, and worked in bloomary forges. A furnace was built at Lenox, in Berkshire county, in 1765, and it made pig-iron in the following year. It had an exceptionally high stack for that day—twenty-eight feet high, and was blown with one tuyere. This furnace was torn down in 1881. Previous to 1773 a furnace was built at Furnace village, in Worcester county, and a few years after that date there were several bloomaries and one refinery-forge in the same county. In 1793 the county contained several manufactories of edge tools, hardware, machinery, etc. In the township of Sutton there were at this time one axe, one hoe, and five scythe manufactories and several naileries. In the whole county there were seventeen trip-hammers. At Springfield, in Hampden county, as stated by Bishop, some cannon were cast and some forging was done during the Revolution, but small arms were not made here until after the peace. The government armory at Springfield was established in 1794.

While the iron industry of Massachusetts was being extended westward it made rapid progress in the eastern counties. Charlotte Furnace at Middleborough was built in 1758, and was in operation for many years. During our two wars with the mother country it was employed in casting shot and shells. The shot which the "Constitution" carried in her conflict with the "Guerrière" were cast at this furnace. In 1784 there were seventy-six iron works in Massachusetts, "many of them small." At Amesbury, in Essex county, a furnace was erected about 1790, and at Boxborough, in Middlesex county, a bloomary forge was built about the same time. In 1795 Dr. Morse reported eleven slitting-mills in Bristol, Norfolk, and Plymouth counties, which rolled and cut in that year one thousand, seven hundred and thirty-two tons of iron into hoops and nail rods. Bishop says that "the two counties of Plymouth and Bristol had in operation in 1798 fourteen blast and six air furnaces, twenty forges, and seven rolling and slitting-mills, in addition to a number of trip-hammers and a great number of nail and smith shops. Cut and hammered nails, spades and shovels, card teeth, saws, scythes, metal buttons, cannon balls, bells, firearms, sheet-iron for tin ware, wire, etc., were made in large quantities." In 1804 there were ten blast furnaces in Plymouth county, all producing castings exclusively. In 1830 only three of these were left—Charlotte, Federal, and Pope's Point, all in Carver township, and all in operation. There were also in 1804 ten forges in the same county, which were principally employed in working "old iron scraps," broken pots, kettles, etc., and produced in all about two hundred tons of bar iron per annum.

Dr. James Thacher, who was a part owner of Federal Furnace, wrote in 1804 a description of this furnace, which was built in 1794, and is said by him to have been the most valuable furnace with which he was acquainted, the manufacture of castings being "there prosecuted to great extent and advantage." The furnace was built of stone, as were all other Plymouth furnaces. It was twenty feet high and twenty-four square, its walls being seven feet thick and its interior ten feet in diameter. Charcoal was the only fuel used, and marine shells formed the only fluxing material. The furnace was lined with "fire-stone" composed of "soft slate." A brick funnel at the top of the stack served "to convey off the blaze and smoke." The doctor continues his description as follows :

At the bottom of an arch in the front of the furnace is an aperture, from which the workmen remove the scoria and dip out the metal. And in another arch on one side there is a small aperture for the insertion of the pipes of two large bellows twenty-two feet long and four feet wide, which being kept in constant alternate motion by the agency of a water-wheel twenty-five feet in diameter, a powerful current of air is excited; and being impelled upon the surface of the fuel the fusion of the metal is greatly accelerated. The whole of this machinery is included in a large wooden building, affording accommodation to the workmen with their apparatus for moulding and casting.

The specific articles manufactured at the Federal Furnace are, besides hollow-ware of every description, Seymour's patent rolls for slitting-mills, of a superior quality, cast in iron cylinders, potash kettles, stoves, fire-backs and jambs, plates, gudgeons, anvils, large hammers, cannon shot of every kind, with a vast variety of machinery for mills, etc.

The ores used in the furnaces and bloomaries of Eastern Massachusetts in the eighteenth century were chiefly native bog and pond ores. Dr. Thacher says, however, that in 1804 "a very considerable proportion of ore smelted in our furnaces is procured from the very productive mines at Egg Harbor in the state of New Jersey, of a reddish brown color, producing from thirty to forty per cent. of excellent iron. The usual price is \$6.50 per ton." He also says that "reddish brown" ore in large lumps was obtained from a mine on Martha's Vineyard, "affording about twenty-

five per cent. and worth \$6 per ton." The pond ores contained from twenty to thirty per cent. of iron, and the average price was about \$6 per ton at the furnace. Bog ore, found in swamps and other low places, was of a "rusty brown color, yielding about eighteen per cent. and worth \$4 per ton at the furnace." The following letter from the Rev. Isaac Backus, of Middleborough, dated July 25, 1794, gives a description of the manner in which pond ores were obtained at that time :

Vast quantities of iron, both cast and wrought, have been made in this part of the country for more than a hundred years past ; but it was chiefly out of bog ore, until that kind was much exhausted in these parts, and then a rich treasure was opened in Middleborough, which had been long hid from the inhabitants. About the year 1747 it was discovered that there was iron mine in the bottom of our great pond at Assowamset ; and after some years it became the main ore that was used in the town, both at furnaces and forges, and much of it has been carried into the neighboring places for the same purpose. Men go out with boats, and make use of instruments much like those with which oysters are taken, to get up the ore from the bottom of the pond. I am told that, for a number of years, a man would take up and bring to shore two tons of it in a day ; but now it is so much exhausted that half a ton is reckoned a good day's work for one man. But in an adjacent pond is now plenty, where the water is twenty feet deep, and much is taken up from that depth, as well as from shoaler water. It has also been plenty in a pond in the town of Carver, where they have a furnace upon the stream which runs from it. Much of the iron which is made from this ore is better than they could make out of bog ore, and some of it is as good as almost any refined iron. The quantity of this treasure, which hath been taken out of the bottom of clear ponds, is said to have been sometimes as much as five hundred tons in a year.

Before proceeding further we may here refer to the first steel works in Massachusetts. In 1750 it was officially reported that there was then in Massachusetts "one furnace for making steel," but its location is not given. The first steel works in Massachusetts of which we can obtain circumstantial information were established at Easton, in Bristol county, in 1785 or 1786, by Eliphalet Leonard. In the early part of 1826 there appeared in the *Boston Patriot* a letter written by Jonathan Leonard, of Canton, in Norfolk county, which we find reprinted in the *New England Historical and Genealogical Register* for October, 1857, and from which we take the following extracts :

As to the making of steel, the first attempt made in this country, so far as my knowledge goes, was by my father, Eliphalet Leonard, at Easton, about the year 1775 or '76. He was led to that attempt by the extreme scarcity of steel and the difficulty of procuring it for his manufactory of fire-arms, then in great demand for the defense of the country. He constructed several furnaces, and so far succeeded as to supply himself and some of the most urgent wants of his neighbors.

In 1787 I obtained further insight into the business, and erected at Easton a furnace capable of making three tons at a batch. This was continued until 1808, when, in consequence of the commercial restrictions, I erected another at the same place capable of making ten tons at a batch, and afterwards from twenty to thirty tons a year. In 1813 I erected another furnace at Canton, where I now live, where I made at times about one hundred tons of steel a year.

Towards the close of the Revolution Samuel Downing, of Trenton, N. J., made considerable blistered steel. During the progress of the Revolution a certain German at Cumberland, in Rhode Island, made steel from the pig after the mode of his country. During the same time some was made at Amenia, in the state of New York. In 1809 a steel furnace was put in operation at Middleborough and another at Canton by Adam Kinsley, and another at Plymouth. About the year 1799 steel was made at Canton by Leonard & Kinsley after the German manner, and afterwards by Dunbar and Leonard. The manufacture of blistered steel is carried on extensively in New York and Philadelphia.

Cast steel has got much into use within a few years. Some was made here during the late war, but it was then difficult to obtain clay that would endure a heat sufficient to melt and take it out of the fire.

There was one Daniel Pettybone who pretended that he invented the welding of cast steel with borax and got a patent for his invention about the year 1802. He put the blacksmiths under

contribution, and after his patent had run out he petitioned Congress to renew it. I told them that it was an art considerably well known among blacksmiths, and I procured several depositions from aged blacksmiths to prove that they had done it in this country as early as the year 1772, and occasionally from that time to 1819. Cast steel had been welded to iron in Canton in 1792, six years before Pettybone dated his invention. This was done by the use of borax. It has likewise been done by the help of bog-iron ore powdered fine and sprinkled on the steel when at a white heat, and formed at that temperature a kind of gluey (glassy) substance which would stick the bars together.

The steel referred to by the writer of the foregoing letter as having been made by his father and himself was cemented steel, otherwise known as blister steel. The statement which he makes concerning the manufacture of steel "from the pig," "after the German manner," is very important, as it shows that this method of making steel was in use in this country in the last century side by side with the manufacture of blister steel—a fact not generally known in our day.

In the same letter Mr. Leonard gives the following information concerning the blast furnaces of eastern Massachusetts in 1826: "There are, if I mistake not, ten or twelve blast furnaces at this time in the counties of Plymouth and Bristol, and one in Norfolk. General Leach seems to have taken the lead of late years in the furnace business. The iron made from bog ore at his furnaces in Easton and Foxborough is thought to be softer and better than in other places for machinery." Bog ore was therefore used in blast furnaces in Massachusetts as late as 1826. More than thirty years ago Professor J. P. Lesley wrote of the old bog-ore furnaces of Massachusetts as follows: "The old blast furnaces of Plymouth County, making a poor iron, in very small quantities, from an ochreous ore dug from the diluvium of the pond bottoms, are almost forgotten. Traditions of them remain only as jests at the primitive ways they were set to work in. One is described as situated on the bank of a stream and lashed to a large tree to protect it from the freshets; when an order came for a few tons of iron the neighboring farmers assembled and blew it in. Small furnaces and poor ore, they served their day and are forgotten; obliterated by the over-rush of two commercial iron deluges, one from the English importers and the other from the anthracite manufacturers."

In 1721 Samuel Bissell, a blacksmith of Newport, R. I., received a loan of £200 from the colonial treasury to enable him to carry on the manufacture of nails. In 1735 Samuel Waldo erected a furnace and foundry on the Pawtuxet river, in Rhode Island, which were afterwards known as Hope Furnace. These are said to have been the most important iron works in the state during the eighteenth century. Cannon and other castings were made here. During the Revolution they were active in producing cannon, cannon balls, and other munitions of war. Hope furnace was located on the north branch of the Pawtuxet. In 1765 Stephen Hopkins, a signer of the Declaration of Independence, "began to work a bed of iron ore in the southeastern part of Scituate," as we learn from his biography written by William E. Foster, and in 1769, as we are informed by the same authority, he began the manufacture of iron at Hope Furnace in company with Nicholas and Moses Brown and Israel Wilkinson. About the year 1735 three furnaces were erected in Cumberland township, in the northeastern part of the state, but they seemed to have been abandoned before the Revolution. They made "cannon, bombs, and bullets" during the French war of 1755. In 1741 iron works were in operation on the south branch of the Pawtuxet river, in the town of Warwick, "for the refining of iron." They were owned by the sons of Jabez Greene. One of these sons was Nathaniel Greene, the father of Major General Nathaniel Greene of the Revolution, who was himself trained to work on the farm and at the forge. In 1770 he was in charge of a forge at Coventry, in

Rhode Island, which was known as Greene's Forge. In 1789 a rolling and slitting mill was established near Providence, on one of the branches of Providence river, and before 1800 a rolling and slitting mill had been established at Pawtucket Falls and other iron-manufacturing enterprises in various parts of the state. Bishop says that "manufacturers of iron, including bar and sheet iron, steel, nail rods and nails, farming implements, stoves, pots, and other castings and household utensils, iron works for shipbuilders, anchors, and bells formed the largest branch of productive industry in the state toward the close of the eighteenth century."

The iron made in Rhode Island in the eighteenth century was obtained from native bog ore in large part, but native hematite and magnetic ore were also used, the latter coming from Cumberland hill. We give below some extracts from a letter to the New York *Tribune*, written in October, 1873, and dated at Providence, R. I., which contained a historical account of Cumberland hill, or Cumberland iron mountain.

During the French war, as early as 1755, the inhabitants of this colony made from the ore from this very mine, mixed with a hematite ore from Cranston, R. I., cannon which were used in the service against the French and Indians, and thus it has aided in carrying out the far-reaching policy of the great Pitt. In 1800, also, cannon were again cast from these ores at Hope, a small village on the Pawtuxet river, in this state, for John Brown, of Providence, who had a contract with the Government at this date to furnish it guns; and, what is singular, the guns were cast hollow, a supposed modern invention. At the foot of the mine is a meeting-house, with the date "A. D. 1700" over the door, the beams and joists of which would to-day be too unwieldy even for ship timber. Though Rhode Island people have not appeared to recognize the importance of this possession, still many places, such as Easton, in Massachusetts, which early entered into the production of iron, have regularly carted from this mine their supply.

Litchfield county, in northwestern Connecticut, contains hematite iron-ore mines of great value, from which the ore for the celebrated Salisbury iron has been taken for over a hundred and fifty years. As early as 1734 a bloomary forge was erected at Lime Rock, in Litchfield county, by Thomas Lamb, which produced from five hundred to seven hundred pounds of iron per day. A blast furnace was afterwards added to this forge at Lime Rock, and it is still active in 1890. About 1848 a forge was erected at the village of Lakeville, then called Furnace village, in the same county, and in 1762 John Haseltine, Samuel Forbes, and Ethan Allen purchased the property and built a blast furnace at Lakeville, but soon afterwards sold it to Charles and George Caldwell, of Hartford. It made two and a half tons of iron in twenty-four hours, and three tons of ore and two hundred and fifty bushels of charcoal were used per ton of iron. Its blowing apparatus consisted of a pair of leather bellows driven by a water-wheel. In 1768 the furnace was sold to Richard Smith, of Hartford. Smith was a royalist, and fled to England during the Revolution, but his furnace was used to produce large quantities of cannon, cannon balls, shells, etc., for the Continental army. After the Revolution it made cannon for the navy, potash kettles weighing nearly half a ton each, and pig iron for forges and foundries. This furnace was abandoned in 1830 or 1831. Colonel Ethan Allen, one of the original owners of Lakeville Furnace, was one of the conspicuous figures of the Revolution. He was born in Litchfield county, but removed to Vermont while still a young man.

A bloomary forge on Mount Riga, in Litchfield county, was built about 1781 by Abner or Peter Woodin. It was afterwards owned by Daniel Ball, and was called Ball's Forge. About 1806 Seth King and John Kelsey commenced to build a furnace on Mount Riga, but they were not able to finish it, and in 1810 it fell into the hands

of Holley & Coffing, who completed it in that year and operated it for many years. The forge and furnace have long been abandoned. The latter was in operation as late as 1856.

About thirty furnaces have been built and operated within a radius of thirty miles of Lakeville, a few of which were in New York and Massachusetts, but the majority were in Connecticut. At the close of the eighteenth century Litchfield county contained many bloomaries, which made iron directly from the ore, and three slitting-mills. At the same time this county was so prominent in the manufacture of nails that only Plymouth and Bristol counties in Massachusetts, of all the nail-making districts in the country, exceeded its production. The iron of Litchfield county is now used entirely for foundry purposes, and most of it is used in the manufacture of car wheels. The first foundry for melting pig-iron in the Salisbury district was built at Lime Rock about 1830, and soon afterwards was purchased by Milo Barnum, the founder of the present Barnum-Richardson Company, and the father of late Hon. William H. Barnum, who was one of the most prominent iron manufacturers in New England. Charcoal is the only fuel used in the blast furnaces of this district.

The annual meeting of the United States Association of Charcoal Iron Workers in October, 1885, took place at New York, but an excursion was made to the Salisbury region in Connecticut. While at Lakeville the local committee had arranged for an address of welcome from ex-Governor A. H. Holley, a resident of the town, who had all his life been an iron-worker, and whose son was the late A. L. Holley. Illness prevented Governor Holley from attending, but he sent a letter of welcome, from which the following is an extract :

You are in the immediate vicinity of one of the oldest iron mines in this country, if not the oldest, it having been wrought more or less for about one hundred and fifty years. The iron produced from it has been proved by various tests at the armories, arsenals, and navy-yards of the nation, to have greater tensile strength and resisting power than any other ever produced. This may seem like an arrogant boast, but the Government, some years since, ordered and received samples of the most noted irons, foreign and domestic, for the *purpose* of testing their strength, and the Salisbury iron endured strains that no other did or could.

You are also within a thousand feet of the site of the oldest charcoal furnace in all the region about us, erected between the years 1760 and 1770. The first cannon cast in the United States for service in the Revolution were made therein. A portion of them were used to arm the ship "Constitution," the old *ironsides* of the American navy. Every one of them bore the test required by the inspectors, and none were ever broken either by our own powder and balls or by those of the enemy. Since the opening and continued use of the old mine above referred to, others of great value have been developed, within a circuit of fifty miles, which produce iron of an exceptionally good quality.

Oldmixon, in his *British Empire in America*, mentions "a small iron mill" as existing at Branford, in New Haven county, in 1741, on a small stream running into Long Island Sound, and he adds that on many of the small streams and branches of the rivers which fall into the sound "bloomaries and small works for a variety of manufactures in iron were established, some of them quite early." The bloomaries were in part supplied with bog-ore, "dug near them," and in part with better ores obtained elsewhere. Bishop says that in 1794 a slitting-mill and other iron works had been erected in East Hartford, a forge at Glastonbury, and two furnaces at Stafford "which made sufficient hollow and cast-iron wares for the whole state." Lesley says that there were at one time, about the beginning of the present century, three furnaces on a branch of the Willimantic river, in Stafford, in eastern Connecticut, near the Massachusetts line, a mile or two apart. Three forges near them converted their pig-iron into bar-iron. Hebron furnace was south of the above-mentioned fur-

naces, and Enfield forge stood a few miles east of Windsor Locks. All of these furnaces and forges were stopped about 1837, when Scotch pig-iron began to come into the country as a substitute for foundry pig-iron of domestic manufacture.

Connecticut was probably the first of the colonies to make steel. In 1728 Samuel Higley, of Simsbury, and Joseph Dewey, of Hebron, in Hartford county, represented to the legislature that the first-named had, "with great pains and cost, found out and obtained a curious art, by which to convert, change or transmute common iron into good steel, sufficient for any use, and was the very first that ever performed such an operation in America." The certificates of several smiths, who had made a trial of the steel and pronounced it good, were produced. He and Joseph Dewey were granted the exclusive right for ten years, "of practicing the business or trade of steel-making." A "steel furnace" was owned by Aaron Eliot, of Killingworth, in Middlesex county, previous to 1750, and in 1761 the Rev. Jared Eliot, of the same place, father of the above-mentioned Aaron Eliot, and grandson of John Eliot, the apostle to the Indians, succeeded in producing in a common bloomery forge, from eighty-three pounds of black magnetic sand, a bar of excellent iron, weighing fifty pounds, and in his son's furnace a part of the bar was converted into good steel. For producing this iron he was awarded a gold medal in 1762 by the London Society of Arts, which is now in the possession of Charles G. Elliott, of Goshen, N. Y. It is inscribed: "To the Rev. Jared Eliot, M.A., of N. England. MDCCLXII. For producing malleable iron from the American black sand." The medal was sent to Mr. Eliot from London, in 1764, "by Thos. Fisher, to the care of our friend, Ben. Franklin." This sand, which is found in the southern parts of Connecticut, as well as in some other states, never received much further attention for conversion into iron or steel. Aaron Eliot's "steel furnace" was doubtless a cementation furnace. In 1750 it was officially reported that there was then only one "furnace for making steel" in Connecticut, and this was probably Eliot's furnace.

Iron ore was discovered near Portsmouth, in New Hampshire, as early as 1634, some of which was sent to England, but we find no evidence that its discovery led to the establishment of any iron-works in that colony. The manufacture of iron in this state probably dates from about 1750, when several bog-ore bloomeries were in existence on Lamper Eel river, but were soon discontinued. About the time of the Revolution there were a few bloomeries in operation in New Hampshire. In 1791 mention is made of iron-works at Exeter. At Furnace village the magnetic iron ore of Winchester was first smelted in 1795 by a Rhode Island company. Franconia Furnace, at Franconia, was built in 1811 by a company which was organized in 1805. This furnace was abandoned in 1865, and there is now no blast furnace in the state, nor any other enterprise for the manufacture of iron or steel except the steel works of the Nashua Iron and Steel Company, at Nashua.

Maine had a few bloomery forges in York county during the Revolution and for some years afterwards, but she has had but few blast furnaces. A small furnace, capable of yielding a ton and a half of iron daily, was erected at Shapleigh, in York county, about 1838. It was used to produce castings from bog ore, and cost only \$13,000. A larger furnace, called Katahdin, was built in 1845 in Piscataquis county, and was lately active. This is the only furnace now in the state. Among its projectors and first owners was the Hon. John L. Hayes, a native of Maine, who afterwards became distinguished as a writer on economic subjects, and as the secretary of the National Association of Wool Manufacturers, and who died at his home in Cambridge, Mass., on April 18, 1887, aged seventy-five years. He was born at South Berwick, Me., on April 13, 1812. A forge was erected near Katahdin furnace soon

after 1845. In 1853 it made seven hundred tons of blooms. It was burned down about 1855. There were in 1884 two rolling mills in Maine; one at Portland and one at Pembroke, but the Pembroke mill has since been abandoned.

The manufacture of iron was commenced in Vermont about 1775. Large deposits of iron ores similar to those of western Massachusetts and western Connecticut had been found in the southern and western parts of the state. In Rutland county ore was mined before 1785. In 1794 there were fourteen forges, three furnaces, and a slitting-mill in this county. In other counties there were seven forges in 1794—one in Bennington, four in Addison, and two in Chittenden. Before 1800 other forges and a slitting-mill were added in this state; possibly a few furnaces. The township of Randolph, in Orange county, had two forges and a slitting-mill at this period. About the beginning of the present century there were twenty bloomeries in the neighborhood of Vergennes, in Addison county, all built with Boston capital. The prominence of Vermont in the manufacture of iron has now been lost. In 1890 the East Middlebury forge, its only remaining iron enterprise, was finally abandoned.

The manufacture of nails was one of the household industries of New England during the eighteenth century. In a speech in Congress in 1789 Fisher Ames said: "It has become common for the country people in Massachusetts to erect small forges in their chimney corners; and in winter, and in evenings, when little other work can be done, great quantities of nails are made, even by children. These people take the rod iron of the merchant and return him the nails, and in consequence of this easy mode of barter the manufacture is prodigiously great." In a description of the town of Middleborough, in Plymouth county, Mass., written in 1793 by Nehemiah Bennet, it is mentioned that "the most common and general employment of the inhabitants of said town is agriculture, which seems to be increasing; though there are a number of mechanicks. Nailing, or the business of making nails, is carried on largely in the winters by the farmers and young men, who have but little other business at that season of the year." When Jacob Perkins, of Newburyport, Mass., invented about 1790 his nail-cutting machine, which was patented in 1795 and speedily followed by other inventions for the same purpose, the occupation of making nails in the chimney corner met with a serious check. And with this check to the making of nails in chimney corners the work of the slitting mills in New England rapidly declined.

The manufacture of hand-made tacks was also a New England household industry during the last century, and down to about fifty years ago. A writer in the *Furniture Trade Journal* thus describes this long-extinct industry: "In the queer-shaped, homely farm-houses, or the little, contracted shops of certain New England villages, the industrious and frugal descendants of the Pilgrims toiled providently through the long winter months at beating into shape the little nails which play so useful a part in modern industry. A small anvil served to beat the wire or strip of iron into shape and point it; a vice, worked by the foot, clutched it between jaws furnished with a gauge to regulate the length, leaving a certain portion projecting, which, when beaten flat by a hammer, formed the head. By this process a man might make, toilsomely, perhaps two thousand tacks per day." New England is now prominent in the manufacture of tacks in this country by machinery. More than two-thirds of our tack industry is controlled by Massachusetts, and fully three-fourths by all of New England. Taunton is the centre of the New England tack industry.

The earliest notice we have seen of a machine for cutting nails occurs in Ar-



Oakes Ames

nold's *History of the State of Rhode Island*. The author says: "It is said that the first cold cut nail in the world was made in 1777 by Jeremiah Wilkinson, of Cumberland, R. I., who died in 1832, at the advanced age of ninety years." Bishop gives a description of Wilkinson's very crude attempts to make cut nails and tacks. Speaking of Wilkinson's tacks he says: "They were first cut by a pair of shears (still preserved) from an old chest lock, and afterwards headed in a smith's vice. Sheet-iron was afterwards used, and the process extended to small nails, which he appears to have been one of the first to attempt. They were cut from old Spanish hoops, and headed in a clamp or vice by hand. Pins and needles were made by the same person during the Revolution, from wire drawn by himself."

All the bloomeries and refinery forges and old-style furnaces of New England have now disappeared, and in their stead have grown up reproductive iron industries of almost endless variety and vast extent, which employ large numbers of skilled mechanics and add greatly to the material wealth of the country. The machine shops, nail and tack factories, hardware establishments, foundries, locomotive works, bridge works, cutlery works, file and screw factories, agricultural-implement works, axe and shovel factories, wire works, etc., together with a few steel works, modern blast furnaces, and rolling-mills, form to-day a striking contrast to the bog-ore bloomeries, not much larger than a blacksmith's fire, and the small charcoal furnaces and chimney-corner nail factories of the last century. "All that," says Lesley, "has given way and disappeared before the inventive spirit of New England, sustained and incited by the wealth of its commercial cities." It may also with great propriety be added that it has "given way" partly because of the exhaustion of bog ores, partly because of the exhaustion of timber for charcoal, and partly because many of the streams which formerly furnished an abundance of water-power are now either dried up or furnish a very small volume of water. All the primitive conditions have greatly changed and now belong to ancient history.



OAKES AMES.

ON the 17th of July, 1803, John Ames, a blacksmith, died in that part of Bridgewater, Mass., which was incorporated as West Bridgewater, February 16, 1822. He was a man of an enterprising spirit, and, in common with other blacksmiths before and since his time, possessed considerable ingenuity and skill. Not content with the ordinary business of his trade, which consisted chiefly of horseshoeing and doing the iron work in the construction and repair of vehicles of all kinds, he entered in a rude way into the manufacture of shovels and guns. The shovels made by him were undoubtedly the first made in the United States, and probably showed the first improvement in that article which the world had seen for more than two thousand years. With a trip-hammer weighing about eighty pounds and a common hammer and anvil he produced a shovel, which, through a process of evolution, has become, by the application of that mechanical talent which his descendants have inherited from him, an implement so perfect that farther improvement seems impossible.

John Ames married in 1759, Susanna, daughter of Ephraim Howard, of Bridgewater, and had the following children: David, born in 1760; Keziah and Susanna,

at unknown dates ; Huldah, born in 1768 ; Abigail, in 1769 ; Cynthia, in 1772 ; John, in 1775, and Oliver, April 11, 1779. Oliver, the youngest child, after receiving such education as the public schools of his native town could afford, entered his father's shop, and there and in the Springfield Armory, where he was for a time with his brother David, who was the founder of the Armory under commission from Washington and General Knox, acquired that knowledge of work in iron which was essential to the success which attended his later enterprises. About the time of his father's death, believing that the manufacture of shovels, with which in a small way he had become familiar, might be enlarged, and its methods improved, he bought mill property in North Easton and entered upon his successful life work. In April, 1803, three months before his father's death, he married Susanna, daughter of Oakes Angier, a successful and able lawyer in Bridgewater. Mr. Angier was the son of Rev. John Angier, of Bridgewater, and great-grandson of Urian Oakes, president of Harvard College from April 7, 1675, to July 25, 1681. This incidental genealogical allusion explains the origin of the name of the subject of this sketch, and also of that of his son Oakes Angier Ames.

It is unnecessary to trace the business of Oliver Ames from its insignificant source, through an ever-widening channel to the enterprise of world-wide fame which it has finally become. In 1844 he retired from active business, transferring it, with its properties, to his sons, Oakes, the subject of this sketch, and Oliver, reserving one-third interest and a voice in its management. With this transfer the firm of Oliver Ames & Sons was formed, and at this point the active business life of the subject of this sketch began.

Oakes Ames, the oldest son of Oliver and Susanna (Angier) Ames, was born in Easton, January 10, 1804. He was educated in the public schools of that town, occasionally when a youth assisting his father in the workshop and on the farm, and finally entered the mill with the view of thoroughly informing himself in the methods of manufacture in all its various departments. He afterwards became overseer, and in 1844, as above stated, became a partner in the firm of Oliver Ames & Sons, and so continued until his death, which occurred May 8, 1873. He was associated at various times with other business enterprises ; but all these, even his business as a manufacturer, sink into insignificance when compared with the gigantic undertaking which he heroically and successfully carried through of building the Union Pacific Railroad. When, or by whom, that road would have been constructed without the agency of Mr. Ames it is difficult and perhaps needless to conjecture. It is safe, however, to say that an enterprise, so beset with difficulties and apparently insurmountable obstacles, would have slumbered until the providential man, in another generation at least, should be raised up for the work. It is easy to say that the settlement of the territories and their increasing business and population would have rendered the task a necessary and easy one ; but it is more easy to answer that that business and population are the results of the construction of the road, and would never have existed without it. The untold wealth which the settlement of our western country has poured into the laps of our people, and the iron bond which has bound the Pacific and Atlantic states beyond the accident of dissolution, are due to the courage, tenacity of will, sagacity and skill of Mr. Ames, and, though a monument has been erected to his memory by the stockholders of the Union Pacific road, on the highest railway pass of the Rocky Mountains, the time has not yet fully come when he will surely be recognized by every true American as one of our country's greatest benefactors.

Before his connection with the Pacific Railroad Mr. Ames had some experience

in public life. In 1860 he was chosen a member of the Executive Council of Massachusetts, and was one of the trusted and esteemed advisors of Governor Andrew in the early years of his administration and of the war. In November, 1862, he was chosen a member of Congress, and was rechosen at four successive elections, thus serving for a period of ten years until March 4, 1873. During these years he served on the Committees on Manufactures, the Pacific Railroad, Revolutionary Claims, and Roads and Canals. As a member of the Committee on the Pacific Railroad he became interested in the project of building that road by means of government aid. He was in no way connected with the initiation of the enterprise, however, as that occurred before he took his seat in the United States House of Representatives. In July, 1862, Congress passed an Act authorizing and making some provision for the construction of a railroad and telegraph line from the Missouri river to the Pacific slope. This Act included grants of land, but provided for a government first mortgage on the road, and the retention of all the money earned by the road for government transportation. Commissioners were named in the Act, who met in September, 1862, before Mr. Ames was chosen a member of Congress, and opened books of subscription. Nothing was subscribed, but a year later enough money was pledged to authorize the election of directors. In July, 1864 a supplementary Act was passed, authorizing an increase in the number of shares, doubling the grants of land, and permitting the Railroad Company to issue first mortgage bonds, taking precedence of the government mortgage, and providing for the retention of one-half, instead of the whole, of the earnings derived from government transportation. No further legislation was had until after the completion of the road. In September, 1864, a contract was made with a man named Hoxie to build one hundred miles of road west from the Missouri river. It was soon demonstrated, however, that he would be unable to comply with the terms of his contract, and quite as conclusively that the road could not be built by individual enterprise. At this point of time Mr. Ames was not a stockholder, and was in no way connected with the undertaking. He had gone to Washington, however, with a reputed ability to undertake and successfully consummate difficult and sometimes almost desperate projects, and his career as a member of Congress had enhanced rather than diminished his reputation. At this critical juncture in the affairs of the road he was appealed to as a forlorn hope to take up the burden, which had proved too heavy for the most skillful financiers, and in this appeal President Lincoln joined with a persistence manifesting his belief in the importance if not the necessity of the road.

At that time a company existed called the Credit Mobilier of America, organized under a law passed by the legislature of Pennsylvania, which on the fifteenth of March, 1865, had assumed the Hoxie contract. Little time, however, elapsed before the company discovered that it was not equal to the task. The affairs of the road had reached a critical stage. Subscriptions failed, gold had a large premium, and the mortgage bonds were unsalable. But to Mr. Ames nothing seemed impossible, and the very difficulties, which others had encountered, served only as a challenge, which he promptly and heroically accepted. He entered the Credit Mobilier Company, and before the year 1865 had expired, he had brought up the paid subscriptions to two and a half millions, and by October, 1866, the one hundred miles provided for in the Hoxie contract were built. In the early part of 1867 two hundred and forty-seven miles had been constructed, but the paid-up capital was exhausted. On the sixteenth of August, 1867, Mr. Ames took a contract to build six hundred and sixty-seven miles and finish the road. On the 15th of October in the same year he assigned the contract to seven trustees, of whom he was one, the profits of the contract to be paid

to the Credit Mobilier stockholders, upon the condition that they would give to the trustees irrevocable proxies to vote on six-tenths of stock, and that the Union Pacific stockholders should approve the contract. Mr. Ames himself invested a million of dollars in the enterprise, and in 1869, seven years earlier than the contract required, the road was completed and handed over to the stockholders, and Mr. Ames was the recognized hero of the hour.

At a later day this great benefactor became a victim to political machinations and to the treachery of some who should have been his firmest friends, and received a censure from the House of Representatives for, as was charged, corruptly disposing of Credit Mobilier stock to members of Congress, which is now universally believed to have been undeserved and cruel. It is unnecessary here to enter into a defence of his character against charges upon which, on an appeal from a demoralized House of Representatives to the people, a unanimous verdict of acquittal has been rendered. The unerring pen of the historian will record the name of Mr. Ames as that of an honest, faithful, indomitable benefactor of his country, and the names of his detractors, if recorded at all, as those of timid politicians, swayed by the wind of scandal, and like the regicide judges disgracing themselves in their judgment against their victim. It may be well, however, to state that the Legislature of Massachusetts reflected the unanimous American sentiment in resolutions passed in the session of 1883. They

“Resolved, In view of the great services of Oakes Ames, representative from the Massachusetts Second Congressional District for ten years, ending March 4, 1873, in achieving the construction of the Union Pacific Railroad, the most vital contribution to the integrity and growth of the National Union since the war; in view of his unflinching truthfulness and honesty which refused to suppress, on his or any other interest, any fact, and so made him the victim of an intense and misdirected public sentiment, and subjected him to a vote of censure by the Forty-Second Congress at the close of its session;

“And in view of the later deliberate public sentiment, which, upon a review of all facts, holds him in an esteem unreconcilable with his condemnation, and which throughout the whole country recognizes the value and patriotism of his achievement, and his innocence of corrupt motive or conduct,—

“Therefore the Legislature of Massachusetts hereby expresses its gratitude for his work, and its faith in his integrity of purpose and character, and asks for like recognition thereof on the part of the National Congress.”

The esteem in which he was held by those who had the best opportunity to watch his career, and to become familiar with the predominant traits of his character, is indicated by the following letters from Hon. J. B. Grinnell, of Iowa, and Hon. S. C. Pomeroy, United States Senator from Kansas, selected from a large number from distinguished men in all sections of the country, paying just tribute to his memory. Mr. Grinnell writes:

“I knew Oakes Ames well for nearly twenty years, though I had no pecuniary transactions with him. I regard him as one of the greatest citizens of our common country and an incorruptible patriot. He was possessed of a comprehensive mind for affairs, and his heart expanded with the widest and warmest sympathies. That his name was tarnished by a thoughtless political cowardice, and that the stain will in good time be effaced, I as little question as I do that truth is eternal. Oakes Ames was of strictly temperate habits; so schooled in economy that, while in Congress, he chose a comparatively inexpensive mode of life, in order to save money to devote to charity.

“In Iowa no name wears more honor than his, for he periled his fortune to build the first railroad across our state. And when an attempt was made to stigmatize our senator-elect, James

F. Wilson, by charging that he had been bribed by Oakes Ames, the people of the state scouted the very suggestion of such a transaction, and indorsed the character of Ames by triumphantly sustaining Wilson.

"On my leaving Congress, Mr. Ames, as a friend, offered me Credit Mobilier stock at its market value. If his purpose had been to influence legislation, my successor and those in Congress should have been the selected recipients of his favors. Not one member only, but no less than ten members of that Congress which wrought such an injustice have declared in my hearing that the act was a foolish concession to popular clamor. The late William E. Dodge, of New York, openly declared it to be a 'cruelty,' and added that, if it were necessary, he would consider it an honor to share his last dollar with Oakes Ames. In the darkest hours of the war Mr. Lincoln was heard to say, 'The proffer of money by Wadsworth, Taylor, Dodge, and the cheer of the broad-shouldered Ames, who imperils his own credit to help the government, reassure me.' In New York and at Alexandria Mr. Ames repeatedly broke up the rings that were formed for the purpose of buying condemned material at a low price. On two different Saturdays I accompanied him to Alexandria on a patriotic mission, when the threats of the conspirators were so numerous and loud that Secretary Stanton thanked him personally for the service, telling him that he had been in greater danger from assassination than the soldiers were of death in battle.

"As a legislator no man's opinions were more eagerly sought or highly prized than his, particularly in currency and revenue matters. Mr. Conkling would say, 'This you understand, Ames, others do not.' Mr. Thaddeus Stevens, chairman of the Ways and Means Committee, on all doubtful matters counted on Oakes Ames to save a measure or kill it, though he never made a motion or speech. It is known who, in the darkest hours, drew the largest checks to keep the loyal party in power; it was thoroughly accordant with the broad views and the herculean labors of the real builder of the Union Pacific Railroad, facilitating gold mining, saving millions annually in the movement of troops and their supplies and in appropriations for the Indian Department, and, more than all, binding the Pacific coast in new and perpetual allegiance to the East.

"In the financial extremities of the Union Pacific I have known Mr. Ames to borrow money from Senator Grimes and others at ten per cent. interest, with a pledge of half the profit on the stock used as collateral to his name. Gen. John A. Dix, after years of effort to enlist capital, as the president of the Union Pacific, gave over in despair, until Oakes Ames came to the rescue; and he frequently asserted that the work done by Oakes Ames was of greater importance to the country than the Erie Canal, and that his name would be placed in history beside that of De Witt Clinton. I could multiply facts and incidents, but they would only be in corroboration of that opinion which underlies the rising spirit that would do even justice, though tardily, to a great name which has been causelessly aspersed.

"If I am a prejudiced friend, it is in part owing to the fact that Oakes Ames once penciled a memorandum promise that at some future day he would begin the founding of a professorship in Iowa College with a gift of \$6,000; but he died heart-broken and without money. Then there came a notice from his executors that 'there is no money, but the wishes of father will be sacredly respected when we are able, without reference to legal considerations.' They were respected, when Oliver Ames for the executors sent the college \$6,000 with interest. And this is the secret of a partiality for that kind of blood, reflecting both the honor and the generosity of a noble father. Who that saw the brave old man going home to die, wounded in the house of his professed friends, was not profoundly moved? For one—and I feel that in this sentiment I am not alone—I would make a journey on foot from my Iowa home to Washington, and there toil for a whole year to see tardy justice done to the fame of this man, who forgot himself in his devotion to his country."

Mr. Pomeroy writes:

"I have wondered if a little incident which fell under my own observation, while Mr. Ames was a resident at Washington, would be of value and interest to you. The incident is as follows: When the Union army, repelling the threatened attack on Washington, near the close of the

late war, was encamped in the neighborhood of Silver Springs, near the Blair Place, it took for its subsistence the crops, provisions, and animals of a farmer in the neighborhood, and left him destitute. This so affected him that he lost his reason, and was taken to the asylum near Washington. The mother of this family likewise became prostrated with sickness.

"Under these circumstances, the eldest child, a girl of some sixteen years, came to Washington, bringing the papers which the army officers had left at the house. Her object was to collect the money due from the government. She applied to the Hon. Oakes Ames for advice and assistance. She asked him if she should employ a lawyer to collect it. Mr. Ames looked at her papers, and answered, 'No, you can collect it yourself, and save the expense.' She hesitated, saying she did not know how, or where to go. 'I will go with you,' was his instant reply. So he walked with the poor girl all the way to the War Department, where he introduced her to the proper officer. The case was examined, and in due time the money was paid.

"Encouraged by an act of such kindness, she called again upon Mr. Ames, seeking to procure employment from the government, to support the family, as she said. She was asked if she could not teach school, and answered, 'I have not finished school myself;' and it would take a whole year before she could get through, and she could not now have money to go any further. Mr. Ames asked her how much it would cost in money for her to go through and become qualified to teach. She answered, 'Fully \$100,' and that she could not think of. 'But if you had the money, would you go through and teach school?' he inquired. 'Oh, I would be glad to,' was her ready reply. Mr. Ames gave her the needed \$100 on the spot, and, with a heart swelling with gratitude and eyes filled with tears, she bade him good-bye.

"I watched the course of this young girl until, after graduating, she taught school in her own neighborhood. At length, desirous of larger compensation, she applied to General Spinner, who gave her an appointment in the Treasury Department, and, so far as I know, she is still employed there. Her father died in the asylum. She and her mother manage to support and educate the family of several younger children, she specially taking upon herself the task of giving a college education to one of her promising brothers.

"The blessings of many, ready to perish, will follow the memory of a man who gave timely and generous aid to such destitute ones without ostentation or display."

Mr. Ames was a zealous friend of public schools, and was always ready to give money and thought to promote them. The firm of Oliver Ames & Sons, of which he was a member, gave to the town of Easton a school-house that cost between \$40,000 and \$50,000, and he personally gave a fund of \$50,000, in seven per cent. railroad bonds, for the "support of the schools and benefit of the children of the village of North Easton." With the \$3,500 income from the fund, for many years lectures, illustrated by the stereopticon, have been given by the best lecturers in the country; and, although for the benefit of the children, they are free to all, and the large hall of the Oakes Ames Memorial Building is filled to overflowing at almost every lecture, showing how much the people of the town enjoy the privilege. A kindergarten school is also maintained. The children are taught Drawing, Carpenter-work, Sewing, and Cooking. The "Swedish Movement Exercise" has been introduced into the schools, much to the pleasure of both teachers and children. Every child is furnished with a weekly or monthly magazine. Mr. Ames not only gave for education in his own town and state, but lent his helping hand to several institutions in the Western states.

The last term of Mr. Ames in Congress expired March 4, 1873. He died at North Easton May 8, 1873, and is buried in the village cemetery in that place.

He married, November 29, 1827, Eveline O., daughter of Joshua and Hannah (Lothrop) Gilmore, of Easton. His children were: Oakes Angier, born April 15, 1829; Oliver, born February 4, 1831, died October 22, 1895; Frank Morton, born August 14, 1833; Henry G., born April 10, 1839, who died in September, 1841, and



Oliver Ames

Susan Eveline, born May 12, 1841, who married, January 1, 1861, Henry W. French, of Pawtucket, R. I.

OLIVER AMES.

OLIVER AMES, thirty-fifth Governor of Massachusetts under the Constitution, happily illustrated the possibilities of achievement and distinction open to the citizen of the United States who faithfully performs in every relation of life the duties lying nearest to his hand. His success was the result of sound and gradual, though steady, development, without which no man can sustain himself and command approval in high social, business and official stations.

Governor Ames illustrated as well the postulate that "blood tells." Descended from an ancient family of the west of England, whose early representatives attained distinction in the leading events of the early civil, ecclesiastical and military history of Great Britain, his latest English progenitor was John Ames, of Bruton, in the county of Somersetshire, the hot-bed of freedom of civil and religious thought, whose son, William, born in that delightful old abbey town in 1605, came in 1635 to New England, and settled at Braintree, in the Massachusetts colony. John Ames, the only son of William and his wife, Hannah, was born at Braintree, May 24, 1647, and his father having died when he was a lad, settled, under the patronage of his uncle, John Ames, an original proprietor of the town of Bridgewater, in that part of its territory now West Bridgewater. In this Plymouth colony town he married Sarah, daughter of Deacon John Willis, the first magistrate of the town, and Elizabeth (Hodgkins) Palmer, his wife. Their fourth son, Capt. Thomas Ames, was born at West Bridgewater, February 21, 1682, and married, in 1706, Mary, daughter of Deacon Joseph Hayward and his third wife, Hannah Mitchell, whose father was Experience Mitchell, a well-known "forefather" passenger in 1623, in the third ship, the "Ann," and whose mother was Jane, daughter of Francis Cooke of the "Mayflower." An elder brother of Capt. Thomas Ames was Capt. Nathaniel Ames, born in 1677, an astronomer of no small attainments, father of Dr. Nathaniel Ames, the celebrated first almanac-maker of America, and grandfather of the renowned statesman and orator, Fisher Ames. The eldest son of Capt. Thomas and Mary (Hayward) Ames was Thomas, born at Bridgewater February 6, 1707, who married, in 1731, Keziah, daughter of Maj. Jonathan and Sarah (Dean) Howard, of that town. The second son of Thomas and Keziah (Howard) Ames was Maj. John Ames, who was born at West Bridgewater April 7, 1738, and married, in 1757, Susannah, daughter of Ephraim and Abigail (Tisdale) Howard. Maj. John Ames was the great-grandfather of the subject of this sketch, and in the stirring days of the Revolutionary War was equally famous as the gunmaker of the province and as captain of a company of "minute-men" at Bridgewater, repeatedly called into active service on "alarms" in Rhode Island and elsewhere. He was commissioned major of his regiment towards the close of the war.

Possessing an energetic and enterprising spirit, the development of which has been so conspicuous in the character of his descendants, Major Ames made, as early as 1773, the manufacture of shovels a prominent feature of his business at his forge at West Bridgewater.

It is a notable fact that the first American progenitor, William Ames, of Braintree, was himself a blacksmith, and was undoubtedly for a time connected with the "Iron Works" of that town, the first established in America, and that in every great development of the iron industry from that day to this, those connected with this

branch of his descendants have been prime factors and are rightfully ranked with the "Iron Kings." The beginnings of the great shovel manufacture, since of such world-wide repute, in the hands of this family, were undoubtedly modest, a trip-hammer of eighty pounds weight and a common anvil being the chief implements in its processes, and the shovels made by Major John Ames were probably the first American products in this line. From the time when Romulus slew Remus with a spade, seven hundred and fifty-three years before Christ, the development of this essential agricultural tool made little progress until John Ames, in 1773, began to apply to it that ingenuity and skill which, in the successive generations of his family, have brought it to its present state of perfection.

The children of Major John and Susanna (Howard) Ames were David, founder of the Springfield Armory under commissions from President Washington and his Secretary of War, General Knox, born in 1760; Keziah, Susanna and Abigail, triplets, born 1762; Keziah again, born 1764; Huldah, born 1766; Abigail, born 1769; Cynthia, born 1771; John, born 1775, and Oliver, born April 11, 1779. The youngest child, Hon. Oliver Ames, the first of the name, who married in April, 1803, Susanna Angier, daughter of Oakes Angier, Esq., of Bridgewater, was grandfather of the Governor who so well sustained the name. Susanna Angier, daughter of Oakes Angier, a graduate of Harvard College in 1764 and an eminent barrister of his day, was, through her maternal grandfather, Col. Edward Howard, a direct descendant of John Winslow, brother of Governor Edward Winslow and uncle of Governor Josiah Winslow, of the Plymouth colony, and his wife, Mary Chilton, of the "Mayflower." She was granddaughter also of Rev. John Angier, and great-granddaughter of Rev. Urian Oakes, president of Harvard College from April 7, 1675, to July 25, 1681, and of direct descent from Rev. Dr. William Ames "of famous memory," the eminent divine, author and theological controversialist, long professor of the University of Franeker in Friesland. His daughter, Ruth Ames, coming with her mother and brothers, after her father's death, to New England, married Edmund Angier, of Cambridge, whose son, Rev. Samuel, father of Rev. John, married Hannah, daughter of President Oakes. By this marriage of Hon. Oliver Ames and Susanna Angier two of the chief branches of the great English family of Ames were united on these shores.

Hon. Oliver Ames, senior, after receiving the common-school education of his day at Bridgewater, was employed at his father's shops, acquiring there those habits of industry, and that practical knowledge of the craft of the iron-worker, especially as related to shovel manufacture, which were the foundation and means of his great success. It is probable that he began to manufacture for himself at Easton in the autumn of 1804, and from that time, with the exception of an absence of a few years, when associated with others in shovel-making at Plymouth, he vigorously pushed the growing manufacture he had here established, and as time advanced joined with himself his sons and grandsons, progressive men of abilities and character of the highest order, since widely recognized in many fields, and the great industry grew to mighty proportions, the old founder's trade-mark becoming "a key to the markets of the world."

The children of Hon. Oliver and Susannah (Angier) Ames were: Hon. Oakes, born January 10, 1804; Horatio, the great gun-founder, born November 18, 1805; Hon. Oliver, born November 5, 1807, the President of the Union Pacific Railway, and otherwise distinguished; Angier, born February 19, 1810; William Leonard, born July 9, 1812; Sarah Angier, born September 9, 1814; John, born April 18, 1817, and Harriet, born September 12, 1819.

Hon. Oakes Ames, M. C., the eldest of these children, married, November 29, 1827, Eveline Orville Gilmore, daughter of Joshua and Hannah (Lothrop) Gilmore, of Easton, a descendant also of Francis Cooke of the "Mayflower."

As "the broad-shouldered Ames," on whom Abraham Lincoln leaned in his anxiety to build the great Pacific Railroad that alone "could bind the Union arch," and secure the west coast to the Union; as the Hercules of achievement whose worth and work grew steadily into noble contrast to the men and the times that were not worthy of him; as a public benefactor, wholly beloved and absolutely trusted by all who knew him, each day adds to the reverence and honor in which coming generations will rightly hold him.

In 1844 Oliver Ames, senior, retired from business, transferring it to his sons, Oakes and Oliver, the father and uncle of Governor Ames, under the firm-name of Oliver Ames & Sons, reserving a certain interest to himself.

Oliver Ames was a representative from Easton in 1828 and in 1833 and 1834, and senator in 1845. He died in Easton, September 11, 1863, and was buried in Easton, where his wife was buried sixteen years before. A handsome monument of Westerly granite has been erected to his memory in the new cemetery in North Easton, and a tablet to his memory is attached to the interior walls of the Unitarian Church in North Easton, whose society he was instrumental in founding. At his death, in 1863, his interest was divided between Oakes Angier Ames and Governor Ames, sons of his son Oakes, and Frederick Lothrop Ames, son of his son Oliver, and they became members of the firm. His son, Oakes Ames, died May 8, 1873, and his son, Oliver, March 9, 1877. In 1876, a year before the death of Oliver, the firm was re-organized under the name of 'The Oliver Ames & Sons' Corporation. The first officers of the corporation were: Oliver Ames, president; Frederick Lothrop Ames, treasurer; Oliver Ames, 2d (the Governor), clerk, and those three, with Oakes Angier Ames, directors. When Oliver Ames, the president, died in 1877, Oakes Angier Ames was made president, and when Frederick Lothrop Ames died, in 1893, his son Oliver Ames was made treasurer.

North Easton, in which the works of the Oliver Ames & Sons' Corporation is located, has not only received those benefits which are always derived from great manufacturing plants, but has been a beneficiary in many other ways of different members of the Ames family. Oliver Ames, the uncle of the governor, built the stone church occupied by the Unitarian Society, and gave it to the society, and by his will left money for the erection of the parsonage which stands near the church. It was designed by John A. Mitchell, a cousin of Governor Ames, and contains, besides the memorial tablet to Oliver Ames, the founder of the society, and another to his son Oliver, who built the church, two memorial windows, one in memory of Oakes Ames, given by his sons, Oakes Angier and the governor, and the other in memory of Helen Angier Ames, daughter of the second Oliver Ames, given by her brother Frederick Lothrop Ames and his mother. Both are very beautiful, but the latter, as a specimen of glass coloring, is not surpassed in beauty by any memorial window in the United States. It was made in New York by John Lafarge, and is as soft and mellow in its colors as the pictures of Guido or Raphael. Oliver Ames and sons, while Oakes and Oliver were living, erected a school-house in North Easton, and Frederick Lothrop Ames built the stone railroad station at that place. Governor Ames and his brother, Oakes Angier, erected a Memorial Hall in memory of their father, and the governor built a high school-house at a cost of \$70,000. Oliver Ames, the uncle of the governor, gave the town of Easton \$50,000 in eight per cent. bonds, the income of which to be expended in the construction and

repair of roads, with a condition that the town should raise \$2000 annually for that purpose, and by his will he established a fund of \$50,000, the income of which should be devoted to the support of the schools of the town; and the governor gave the sum of \$2000 per year to the town for the purpose of planting trees along the highways, with the requirement that the town should add annually a sum equal to fifty cents on each poll. The corporation gave to the town, in 1876, the Unity Cemetery, at North Easton, containing about five acres of land, and Oliver Ames, 2d, gave the money for the erection of a library building in North Easton, and established a fund, to which his widow has added, for its support. In addition to the above, Oakes Ames, the father of the governor, left a fund of \$50,000 for the benefit of the children in North Easton.

Governor Ames was the son of Oakes Ames, the oldest son of the founder of the shovel works, and Eveline Orville (Gilmore) Ames, and was born in North Easton, February 4, 1831. He received his education at the public schools of Easton and at North Attleboro and Leicester Academies, and pursued a special course of study at Brown University, from which institution he received the degree of LL.D. in 1892. After leaving college he entered the establishment of Oliver Ames & Sons, occupying a position in which he might learn with thoroughness the methods of manufacturing and general business. Having mastered the intricate details of the industry he was employed for a time as a traveling salesman, from which position he was promoted on the death of his grandfather, in 1863, to a membership in the firm. Early realizing the importance of an efficient militia system throughout the commonwealth, he took an active interest in the military organizations in his town and its vicinity, and for several years served as second lieutenant, adjutant, major and lieutenant-colonel. His experience in the service enabled him at a later day, and in the highest office of the state, to advise and approve such measures as would be likely to strengthen and perfect the military department of the commonwealth. He became also at an early date interested in the welfare of the schools of his native town, and not only served twelve years on its School Board, but, as has already been stated, contributed generously for their support.

On the death of his father, in 1873, as one of the executors of his estate, new and heavy burdens and responsibilities were thrown on him. The estate, valued at about six million dollars, but heavily encumbered, was managed by him and his brother, Oakes Angier, his co-executor, with wonderful shrewdness, and it was successfully relieved of its burdens. Not long after a large interest in the central branch of the Union Pacific in Kansas came into his hands, and, to make it of value, great prudence, and at the same time great shrewdness and courage, were essential. The stock was valueless; the road was barely paying expenses, and the mortgage bonds were selling at thirty, with five years' coupons unpaid. In 1877 he made a personal inspection of the road, extended its construction from one hundred to three hundred and sixty miles, and built necessary branches. The men with whom he was obliged to contend, in order to save it from becoming a sacrifice to their interest in other roads, were Jay Gould, Sidney Dillon and Russell Sage. The North Easton manufacturer proved himself, however, a match for the Wall Street Napoleons, and before he had done with them he prevailed on Mr. Gould to buy of him and others whom he represented five-eighths of the capital stock at \$250 per share. Of the many railroads with which he was connected, as either president or director, may be mentioned the Sioux City and Pacific Railroad; the Union Pacific; the Central Branch of the Union Pacific, in Kansas; the Atchison, Topeka and Santa Fé; the Chicago, Iowa and Nebraska; the Iowa Falls and Sioux City; the Cedar Rapids

and Missouri River; the Fremont and Elkhorn Valley; the Hastings and Dakota; the Atchison and Pike's Peak; the Waterville and Washington; the Republican Valley; the Solomon Valley and Atchison; the Colorado and Pacific; the New Orleans, Mobile and Texas; the Hoosac Tunnel; the Toledo and St. Louis, and others. He was also president of the Brayton Petroleum Motor Company; a director in the Turner's Falls Water-Power Company; the Moingona Coal Company of Iowa; the Missouri Valley Land Company; the Commonwealth National Bank of Boston; the Easton National Bank; the Bristol County National Bank; trustee of the Easton Savings Bank, and Boston Five Cent Savings Bank; president of the Merchants' Club of Boston, and president of the Boston Art Club.

But Governor Ames was widely known not only as a manufacturer and capitalist, but as a statesman. His earliest connection with politics was as a member of the Republican Town Committee of Easton, of which he was chairman and treasurer. He was a member of the Massachusetts Senate in 1880 and 1881, and served both years on the Railroad and Education Committees. In 1880 he was largely instrumental in securing the incorporation of Cottage City, which was consummated on the 17th of February in that year. Having at that time a cottage in that place he felt especially interested in the movement to detach it from the distant town of Edgartown, of which it was a part. In 1882 he was nominated by the Republicans for lieutenant-governor on the ticket with Robert R. Bishop, as candidate for governor. Mr. Ames was chosen and Mr. Bishop defeated. He served during the year 1883 with Governor Benjamin F. Butler, and the three succeeding years with Governor Robinson. His career as lieutenant-governor was marked by two events creditable to himself and of great importance to the state. These were the sale of the state interest in the New York and New England Railroad and that of the state's interest in the Hoosac tunnel, which were effected mainly through his efforts. The three and a half millions of the former were sold at 92.50 per cent. and the seventeen millions of the latter for \$5,000,000, and though the opposition to the latter sale was at first serious and determined, no man now regrets the consummation. In 1887, 1888 and 1889 he sat in the executive chair, and through his efforts, of which he may well be proud, the project for an addition to the State House, now near completion, was carried through. His whole administration was characterized by wise foresight, prudent recommendations and an intelligent understanding of the conditions and wants of the commonwealth.

In his inaugural address to the legislature of 1888, he presented a carefully prepared statement of the expenditures which the commonwealth was called upon to make annually, because of the lack of accommodation in the state-house for the proper transaction of the public business, and called attention to the fact that the much-needed additional room could be had at a comparatively moderate cost by adding to the structure then in use. His recommendations on this subject received the hearty approval not only of almost the entire legislature, but also of nearly every newspaper of importance, and popular commendation of them was practically unanimous. On Forefathers' Day, 1889, the preliminary work had been so far advanced that he laid the corner-stone of the new structure, the Grand Lodge of Free Masons of the commonwealth assisting. He thus closed his administration of the affairs of the state by an act whose beneficial results will be felt for centuries to come.

Governor Ames brought to the administration of his high office, and employed in the exercise of its powers, all the acumen of a robust and healthy mind developed by long years of dealing with eminent men in important affairs. More fully perhaps than in any other way a governor may show his ability, or lack of ability, in the ap-

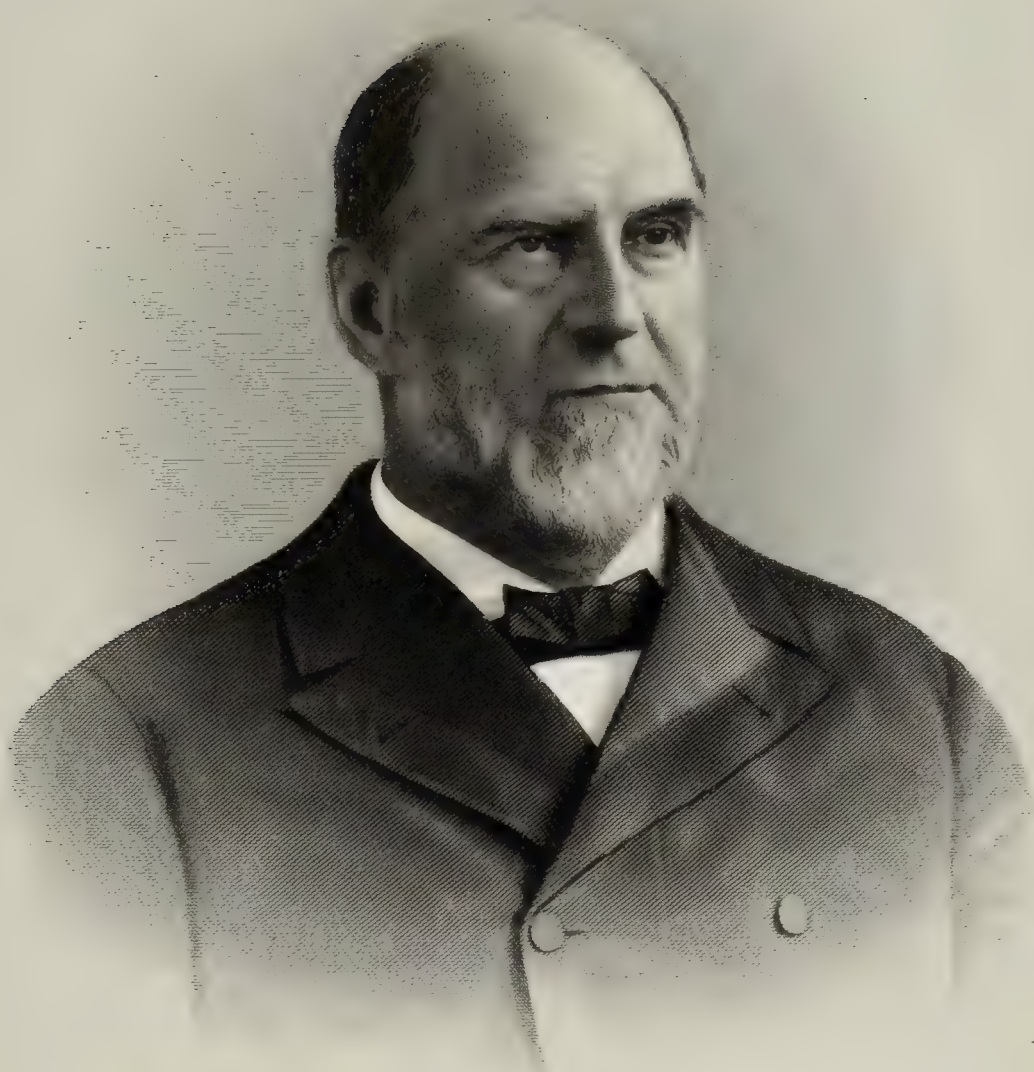
pointments which he makes. Governor Ames was particularly happy in the choice of men to occupy places of responsibility and honor. To a wide acquaintance he applied a keen and well-balanced judgment, and no one whom he selected has been the subject of animadversion. He greatly strengthened the Supreme and Superior Courts by placing on their benches men who, though comparatively young, had shown great capacity and exceptional ability in the practice of their profession, and, without exception, these men have fully justified his action in selecting them to administer the judicial functions of the commonwealth.

Although he was not an orator, Governor Ames was everywhere welcomed with heartiness and enthusiasm, and in response to the cordial greeting which was always accorded him, he replied in well-chosen and forcible words, which had always marked effect upon his hearers. To him the commencement at Harvard University was one of the great events of the year, and to him the alumni did full and fitting honor. His final speech to them, the greeting of a business man to those engaged in professional work, was a model of terse common sense, and was applauded as the utterances of a governor on like occasions seldom are.

Outside the commonwealth he was well known long before he became its governor, and that acquaintance was extended by him during his terms of office. In 1887 he went to Philadelphia and joined in the celebration of the one hundredth anniversary of the adoption of the Constitution of the United States, his escort being his official body-guard, the First Corps of Cadets, and the First Regiment of Militia. Two years later he represented Massachusetts at New York at the celebration of the one hundredth anniversary of the inauguration of George Washington as President of the United States, his escort on that occasion being the First Corps of Cadets and the Fifth Regiment of Militia. Both in Philadelphia and in New York he was one of the most popular of the visiting governors, and the soldierly bearing of his escort was the subject of much admiring comment.

Late in June, 1888, Governor Ames's health broke down under the strain of his combined official duties and the management of his personal affairs, but, although he was not from that time a well man, he in no degree allowed his physical condition to diminish his interest in public affairs or his ardor for the general good. His administration was characterized by wise foresight, prudent recommendations, and an intelligent understanding of the conditions and wants of the commonwealth.

After his retirement from the executive chair, he sought rest and recreation in a visit to Europe, which was repeated during the summer of 1894. He gradually loosened the ties which bound him closely to business, and with his winter-house in Boston at the corner of Massachusetts and Commonwealth avenues, and his summer-house at North Easton, he enjoyed the comforts and enjoyments which are the worthy fruits of an active and useful life. His estate at North Easton, where he lingered late into the autumn, contains attractions, from which he was reluctantly drawn, when the approaching cold of winter rendered his city-home with all its surroundings of social life, more attractive to his family circle, if not to himself. It contains about one hundred and twenty acres, dotted with gardens, groves and lawns, on the margin of a miniature lake, overlooked by the stone mansion, in which may be seen a choice collection of works of art, which with rare judgment and taste he gathered in his various visits abroad. The scattered groups of trees on the estate contain one hundred varieties, among which may be found the fern-leaf beech, the object of his special pride, and the admiration of every cultivated eye. Here he might have been seen on every summer day, either enjoying the scenery about him, or busy in devising additions to its beauty, but always ready with hospitable hand to greet the visitor



Charles A. Ames

to his home. As has been said by one who knew him well: "Free from the pride of wealth, temperate, conservative and distinguished for his strong common sense, his generous, unsuspicious nature, and unswerving fidelity to the interests committed to his trust, he justly won a multitude of friends."

Governor Ames married, in Nantucket, March 14, 1860, Anna Coffin, daughter of Obed and Anna Way (Joy) Ray, and adopted daughter of William Hadwen, of that place. His children are Capt. William Hadwen, born March 1, 1861; Evelyn, April 4, 1863; Anna Lee, born September 6, 1864; Susan Evelyn, born September 17, 1867; Lilian, born January 4, 1870; and Oakes, September 26, 1874. Oakes, the youngest child, is a recent graduate at Harvard, while Captain William, the oldest, is connected with the Oliver Ames & Sons' Corporation, and is exhibiting an ingenuity and inventive skill which cannot fail to still further develop and perfect the business in which it is engaged.

After leaving the executive chair, the restoration of his health, impaired by labors of both body and mind, Governor Ames sought in vain. With unremitting caution on his own part and care on the part of his family and friends, his life was prolonged until the 22d of October, 1895, when his death occurred at North Easton, among the scenes which had been his companions through life and which he loved so well.

OAKES ANGIER AMES.

OAKES ANGIER AMES, son of Oakes and Eveline (Gilmore) Ames, was born in North Easton, Mass., April 15, 1829. He received his education at the public schools of his native town, at Fruit Hill Academy near Providence, and at the academy in Leicester, Mass. At the age of eighteen he entered the shovel works of Oliver Ames & Sons, a firm of which his father was a member, and, with the view of making himself master of the process of manufacturing shovels, he spent from three to six months in each of the various departments of the factory. After his father and his uncle Oliver retired from active supervision of the practical operations of the mill in 1860, he with his brother Oliver took their places, and after 1873 he became the sole superintendent.

Oliver Ames, the founder of the shovel business, and the grandfather of the subject of this sketch, retired from active participation in the management of the affairs of the mill in 1844, transferring it, with its properties and business, to his sons Oakes and Oliver, the father and uncle of Oakes Angier Ames, under the firm-name of Oliver Ames & Sons, reserving for life one-third interest, and the right of a voice in the decision of important business questions. He died at North Easton, September 11, 1863, and his one-third interest was divided between Oakes Angier Ames and Oliver Ames, sons of his son Oakes, and Frederick Lothrop Ames, son of his son Oliver. These three grandsons then became members of the firm of Oliver Ames & Sons. Oakes Ames, the father of this sketch, died May 8, 1873; and in 1876 the firm of Oliver Ames & Sons was organized as the Oliver Ames & Sons' Corporation, with Oliver Ames, the uncle of Oakes Angier Ames, as president, Frederick Lothrop Ames as treasurer, and Oliver Ames, the late governor, clerk; and these three, with the subject of this sketch, directors. Oliver Ames, the president, died in 1877, Oakes Angier Ames succeeding him; and at the death of the treasurer, Frederick Lothrop Ames, he was succeeded by his son Oliver Ames, second. As president Mr. Ames

has the entire and sole management of the mills, and his early training abundantly qualified him for the responsible position he holds.

The development of the business of Oliver Ames & Sons, and the Oliver Ames & Sons' Corporation, and its evolution from small beginnings, illustrate the ingenuity and energy and skill which have characterized New England men, and made them successful competitors with European manufacturers in the markets of the world.

Oliver Ames, the founder of the business, became somewhat familiar with the rude manufacture of shovels carried on by his father, John Ames, in West Bridgewater; where, with the aid of a trip-hammer, weighing eighty pounds, and a common anvil, a few dozens of shovels were made in the year. After his father's death in 1803 he removed to North Easton, and beginning a business, the product of which was carried by wheel to Boston and Newport at considerable intervals, five or six dozens at a load, he lived to see drawn by rail from his mills, which are now the largest shovel works in the world, three hundred dozen shovels a day, or about one hundred thousand dozens a year. At a later date the product has reached at times one hundred and thirty-five thousand dozens in a year, or four hundred and fifty dozens in a day, and finds markets not only in all parts of the Union, more especially in California and New England, but in South America, the Cape of Good Hope, and Australia, where the Ames shovels have driven English goods from the market and have almost exclusive control. In acquiring the reputation for their work which the North Easton mills possess, it has from the first been the aim of the manufacturers to make the best article, and attach to it their own mark. They never believed in the policy, too prevalent in our country, of seeking sales by the aid of foreign trade-marks, but have always felt confident that a good shovel with the Ames brand would enhance their reputation, and thus by the aid of the brand secure larger sales. In the early days of the business, Oliver Ames, the founder, found it difficult to counteract the prejudice in favor of shovels of English manufacture, and on one occasion was told by an unwilling customer, "You cannot make a shovel that will equal the English, but when you can I will buy of you." When the goods already in the customer's stock were exhibited, he found, much to his chagrin, that what he called his best English shovels bore the Ames brand, and he became a buyer.

The shovel works at North Easton are worthy of a visit by those who, familiar as they are with an article in the commonest use, know nothing of the various steps in the process of its manufacture. Ben. Wade, with his experience in politics and statesmanship, having only a crude idea of the manner of making this useful implement, exclaimed, while walking through the mills with Governor Ames, that he "did not know there was so much d——d fuss in making a shovel." All parts of the shovel are made in the works except the handles and steel sheets. The handles are cut from ash and brought from Maine, Michigan, Ohio and Indiana. When received at the factory they are perfectly straight, and are replaced in boiling water to soften them and render them fit for bending at the lower end and bent. They are then placed in a drying room and exposed to a temperature of one hundred and ten degrees and thoroughly seasoned. The steel plates of different widths for different sizes of shovels, spades, etc., are bought where they can be found of the best quality. In answer to the question why the plates are not made at the mill, Mr. Ames said that he preferred selecting always the best steel, to running the risk with his own manufacture of making now and then a poor quality of plate, and feeling obliged to throw it aside at a loss, or impair by its use the character and reputation of his shovel. The processes of the manufacture are various. The plates are cut by machinery into needed sizes, and pounded and shaped, their edges trimmed, straps

cut for sockets, and either welded or riveted, the handles bent and fitted, and then with hammering by hand hammers and with polishing the shovel is complete. The best shovel made at the mills, and probably the best in the world, is that called the "Antrim Patent." Its main point of difference from other shovels lies in the welding of the straps instead of riveting them. A writer familiar with the "Antrim Patent" says, that the "Moulds of steel are placed seriatim under a pony hammer just adapted to scarf the plate at the point on its edge where the strap is to be joined; in other words a little lip is made on to which the back strap may be welded. The straps of this shovel are made from the best 'Swedes,' and it is designed that all the advantages of the patent handle, the improved method of manufacture, and all new approved devices shall unite in sustaining the reputation the 'Antrim Patent' now holds unchallenged as the *ne plus ultra* of shovels. The back strap is welded to the scarfed edge by a pony hammer; two holes are then punched in the mould, and the front strap, which has been previously stamped out into much the shape of the back strap of the cast-steel shovel, is riveted on, simply that it may be firmly held in the proper position for welding. The moulds are then re-heated in a furnace, and as it is necessary to have only that part of the plate to which the triangle of the strap is attached brought to welding heat, an opening of just its shape and size is made through the bed of fire-brick on which the plate is laid. Through this the concentrated heat of the furnace is forced by a blast upon the surface thus circumscribed, quickly bringing it to proper condition for the action of the hammer, the face of which is so formed as to bear only on the edges of the triangle, leaving the socket undisturbed where the weld is made." Every description of shovel is made, from the toy shovel to grain scoops used at elevators. The long and short-handled, square and round-point shovels of common use form the bulk of the manufacture, but besides, there are made spades, mining shovels, grain and coal-scoops, Benham's army shovels, hedgers, narrow tree-spades, and many others, too numerous to mention.

Mr. Ames gives his whole time to the demands of his business, and yields to no temptation to embarrass himself and the trusts he administers as manager of the shovel works, by the complications and annoyances which beset the paths of the politician, and of the projector of enterprises outside of his legitimate occupation. While thus performing his whole duty in the office which he holds as president of the Oliver Ames & Sons' Corporation, his interest in his native town has been manifested by benefactions conducive to its highest and permanent welfare. As a member of the old firm of Oliver Ames & Sons, he participated in the gift of a school-house in North Easton, and has united with his brother, the late governor, in the erection of a Memorial Hall in North Easton in memory of his father, and devoted to the uses of the town. He has also with his brother placed in the Unitarian Church, in North Easton, a memorial window in memory of his father. In 1876, the corporation of which he is president gave to the North Easton village the cemetery in North Easton, containing about nine acres of land, in which may be seen substantial and costly monuments to the memory of Oliver Ames, Sr., and his sons, Oakes and Oliver, the father and uncle of the subject of this sketch.

Mr. Ames is president of the North Easton Savings Bank, a director in the Lincoln National Bank of Boston, president of the Ames Security Register Company, vice-president of the Easton National Bank, and a trustee of the State Lunatic Hospital, at Taunton.

He married July 19, 1855, Katherine, daughter of the late Hon. Aaron Hobart, of East Bridgewater, many years Judge of Probate of Plymouth County, and has four

children: Maria Hobart, who married Dr. R. H. Harte, of Philadelphia; Hobart, who is actively occupied in the business of the corporation; Winthrop, class of 1895 Harvard, and Katharine.

FREDERICK LOTHROP AMES.

FREDERICK LOTHROP AMES, one of the country's great capitalists, and widely known as a man of strong and unsullied character, was born in Easton, Mass., June 8, 1835. He was the son of Oliver and Sarah Lothrop Ames, his mother being the daughter of Hon. Howard Lothrop, of Easton, who had served in the Massachusetts Senate and in other official positions, and sister of Hon. George Van Ness Lothrop, United States Minister to Russia during Cleveland's first administration.

At Bruton, in the shire of Somerset, England, was the ancestral home of the Ames family, and thence, some fifteen years after the New England fathers set foot on Plymouth rock, William, the first one whose name appears in Massachusetts annals, removed to the settlement of Braintree.

The history of the Ames family forms an interesting chapter in the industrial annals of New England. The foundations of the family fortunes were laid about 1773, when Captain John Ames, great-grandfather of our subject, began the making of shovels in West Bridgewater. Captain John's son, Oliver, learned his trade at his father's forge, went to Easton, and in 1803 established the works and firm which have since attained world-wide reputation under the name of Oliver Ames & Sons. Of Oliver's sons, the best known were Oakes and Oliver, the latter being the father of Frederick L. Ames.

The first Oliver Ames, who gave his name to the shovel manufactory, never became practically interested in railroad affairs; in fact within the period of his active career railroad building had reached limits of comparatively small magnitude, and his mind and abilities were fully occupied with the enterprises which he had in hand. It was during the gold excitement in California, and a few years after, during the similar excitement in Australia, that Oliver Ames & Sons began to develop their great trade, which rapidly grew to large proportions. Later the firm supplied immense quantities of shovels to the United States Government during the Civil War, and afterwards, through the sons, Oakes and Oliver, became interested in the building of the Union Pacific Railroad. The full tide of the business success of these two brothers fell upon the exciting times incident to the first great railway development in this country. Large-minded and vigorous, and possessing excellent judgment and clear-sightedness, they foresaw the advantages that were likely to result to the country and themselves from just and judicious management of the rising interests, and accordingly threw themselves into railroad development with all the ardor and ability for which their name had already become noted. Without them, and others like them, would never, in their day, have been forged the link that binds East and West in bonds that shall never more be severed. In the decade between 1870 and 1880 both died—Oakes, the elder, in 1873, and Oliver, the younger, in 1877.

Frederick L. Ames received his early education at Concord, Mass. He was prepared for college at Phillips Exeter Academy, and was graduated from Harvard University in 1854. In recent years, and at the time of his death, he served as fellow and trustee of that institution. In his youth he had a strong fancy for the law,



Frederick L. Ames

but, in accordance with his father's wishes, he went into business, beginning as a clerk in the office of Oliver Ames & Sons, at North Easton, and securing promotions from grade to grade, according to the rules which prevailed in the establishment. After several years' labor as a subordinate, he was placed in charge of the accountant's department; here he exhibited marked business ability, and solely by his industry and aptitude won advancement. He was in his twenty-eighth year when, in 1863, by the death of his grandfather, he became a member of the firm. In 1876, before his father's death, the firm was reorganized under the title of Oliver Ames & Sons' Corporation, Frederick L. Ames, treasurer. Soon after he succeeded his father as the official and actual head of that great manufacturing concern.

But it was not exactly in the path that his father had marked out for him that he became most famous. When his father died he was already a rich man by reason of the great success that had attended his individual enterprise in the business world. He had invested as liberally as he could afford in western railroads, and while he was still comparatively a young man he was a director in the Union Pacific, the Chicago and Northwestern, the Missouri Pacific, and Texas Pacific roads, and had gradually diverted his interests from manufacturing to railroads.

While he retained his interest in the North Easton factory of his ancestors, being treasurer of the corporation at the time of his death, it was in the larger field of railroad enterprises that he distinguished himself, and has left a name conspicuous among the foremost men of the railway world. Being a judge of the value, quality, resources and possibilities of railroad property, he was considered an adviser almost unequalled in such matters. Universally conceded to have been one of the best informed men in railroad business in the country, he was vice-president of the Old Colony Railroad Company, a director in the Old Colony Steamboat Company, and held directorships in about half a hundred other railroad companies, including the following:

Atchison, Colorado and Pacific; Atchison, Jewell County and Western; Boulder Valley and Central City Wagon Road; Carbon Cut-Off Company; Central Branch Union Pacific; Chicago and Northwestern; Colorado Western; Denver, Leadville and Gunnison; Denver Union and Terminal; Echo and Park City; Fall River, Warren and Providence; Fitchburg; Fort Worth and Denver City; Gray's Peak, Snake River and Leadville; Golden, Boulder and Caribou; Junction City and Fort Kearney; Kansas Central; Kansas City and Omaha; Laramie, North Park and Pacific Railroad and Telegraph Company; Lawrence and Emporia; Leavenworth, Topeka and Southwestern; Loveland Pass Mining and Railroad Tunnel Company; Manhattan, Alma and Burlingame; Montana Union; Montana Railway; North Park and Grand River Valley Railroad and Telegraph; Omaha and Elkhorn Valley; Omaha and Republican Valley; Oregon Railway and Navigation Company; Oregon Railway Extensions Company; Oregon Short Line and Utah Northern; Providence, Warren and Bristol; St. Joseph and Grand Island; Salina and Southwestern; Solomon; Union Pacific; Union Pacific, Lincoln and Colorado; Union Pacific, Denver and Gulf; Washington and Idaho, Walla Walla and Columbia River.

Besides his official connections with railroads, Mr. Ames' remarkable business energies found employment in other fields. He was president of the First National Bank of North Easton, president of the North Easton Savings Bank, and of the Hoosac Tunnel, Dock and Elevator Company, and a director in the New England Trust Company, the Old Colony Trust Company, the Bay State Trust Company, the American Loan and Trust Company, the Mercantile Trust Company of New York, General Electric Company, Western Union Telegraph Company, and others.

In the business world, Mr. Ames was not regarded as a speculator, his operations being always undertaken from practical standpoints. His judgment was clear, cool and sound, unmoved by mere hope, enthusiasm or excitement of any kind, leading him straight to the mark. He was neither elated by success nor depressed by failure, but kept an even temper amid the distractions of a most active business life. Associated in the closest relations with some of the most noted business characters in the country, his shrewdness and sound judgment enabled him to work with them as their equal in enterprise and ability to manage when legitimate operations were in question, while his probity and strict integrity rendered him proof against any doubtful enterprises or compromising combinations. He had all the Ames method in business operations, neglecting no details which ought to occupy his attention, untiring and methodical in business habits, energetic to the last degree, forgetting nothing and forsaking nothing on the ground of lack of necessity for personal action.

Thus far, we have considered Mr. Ames only as an able and eminent business man, but he was much more than that. His was a strong and cultivated intellect, a self-poised, self-respecting, vigorous character. He was a refined gentleman, who was at once courteous and dignified, a man conversant with, and interested in, all the great questions of the day, with decided literary and intellectual tastes, a lover of the beautiful in nature and in art. Not only in business matters, but upon the many other subjects to which he turned his attention, his judgment was remarkably clear and sound, always commanding attention and respect.

For years past he has been warmly devoted to the welfare of Harvard University. Through his liberality, the Arnold Arboretum and the Botanical Department of the University, in which he was especially interested, have been able to greatly extend their usefulness.

In early life, his profound love of nature, which he enjoyed to the last, turned him to horticulture, in which he became deeply engaged. Mr. Ames was one of the most liberal patrons of horticulture America has produced, and his collection of orchids was a great source of pride to every one interested in the progress of the art in which he found his principal pleasure. This great collection, begun many years ago, has gradually grown and improved until it surpasses all other collections of these plants in America, and in number, variety, and condition has not a superior. Mr. Ames' love of nature was real and profound, and his exact and comprehensive knowledge of the plants in which he was particularly interested has given him an international reputation among orchidologists, and many rare orchids have been named for him. His ambition and success in establishing this noted collection, surrounded in his glass-houses in North Easton by much of rare horticultural beauty, and in great variety, has resulted in having the fame for this work credited not alone to Mr. Ames and his own state, but also to our nation. Honor to the man whose work brings honor to his country!

For nearly thirty years Mr. Ames was an active member of the Massachusetts Horticultural Society; he has long been one of its vice-presidents, and as a member of the finance committee has rendered it invaluable service.

His country home in North Easton is one of the most extensive and beautiful estates in New England. His large greenhouses have been a public benefit and delight, as they have been freely opened, not only to the residents of North Easton, who took great pride in them, but also to visitors from far and near.

His interest in rural arts and in rural economy was deep and active, and he was for many years a trustee of the Massachusetts Society for Promoting Agriculture.

Mr. Ames was intensely a New Englander, and had an abiding faith in the

future of Boston, where his wealth had been invested to a degree that made him the city's largest owner of real estate. Here, also, it was that as a client of Richardson he exercised a marked influence for improvement upon the business architecture of the city, such as probably no other individual has yet exerted. In the great, tower-like Ames Building, at the corner of Washington and Court streets, designed by Richardson's successors, Mr. Ames leaves a substantial monument in the form of one of the most beautiful and original examples of the gigantic office structures that characterize our leading American cities.

But loyalty to his native town and village was one of his marked characteristics, and it was manifest in the beautiful architectural additions he made to the place. With his mother and sister he largely increased the bequest left by his father to build, equip and endow a public library, and, employing Richardson as architect, he erected one of the most beautiful library buildings in the country. His Gate Lodge, at the north entrance of his grounds, built of moss-covered stones of irregular shape, is exceedingly unique and interesting. This, and the beautiful railroad station which Mr. Ames erected at his own expense for the adornment of the village, are also worthy memorials of Richardson's genius.

Mr. Ames was a liberal patron of the fine arts, and showed unusual discrimination in the selection of his purchases. In his winter home in Boston, he had a superb collection of paintings, tapestries, jades and crystals, among the latter the largest known. He owned some of the finest examples of Millet, Rousseau, Troyon, Dias, Daubigny and Corot, and many other important paintings, notably two very fine portraits by Rembrandt, dated 1632, of undoubted genuineness and great value.

In politics Mr. Ames was originally a Whig, but later became a Republican. He never, however, cherished political aspirations, and his tastes disinclined him to seek positions that would bring him into public notice. Much against his will, he was elected to the State Senate in 1872. The nomination had been made in his absence and without his knowledge. He served during his term on the Committee on Manufactures and Agriculture. In religious life he was a devoted Unitarian, and took an active part in the affairs of the church at North Easton, and of the First Unitarian Church of Boston, and he was one of the most generous givers to denominational objects.

He was a liberal contributor to charitable enterprises and personally devoted much time and money to worthy objects. He was president of the Home for Incurables, and a trustee of the Children's Hospital, of the Massachusetts General Hospital, and of the McLean Insane Asylum. He was also deeply concerned in the work of the Kindergarten for the Blind.

On the 7th of June, 1860, Mr. Ames was married to Rebecca Caroline, only child of James Blair, of St. Louis, Mo. Six children were born to them, of whom five are now living: Helen Angier, the wife of Robert C. Hooper, of Boston; Oliver, who married Elise A. West, of Boston; Mary Shreve; Lothrop, and John Stanley.

Mr. Ames possessed the happy faculty of leaving his business cares behind him when he crossed the threshold of his home. It was there that he found his truest delight. There, with his wife and children, surrounded by the works of art he so well appreciated, deeply interested in the best books, he passed his happiest hours, and gained the rest that alone enabled him to undergo the severe and ceaseless tension of his business affairs.

Mr. Ames' death occurred September 13, 1893, in the height of his great business activities, and was a severe blow to the financial interests of Boston and of all New England. The press of New England, and of the entire country, paid common

tribute to his distinguished abilities, eminent services and unblemished character. Of honored lineage and sterling personal character, as a great man of business he will be best, and very properly, remembered. Here he takes a rank with the foremost of his generation in this country, and it should be held to his lasting honor, that he won this proud place without compromising the characteristic integrity of the Massachusetts gentleman.

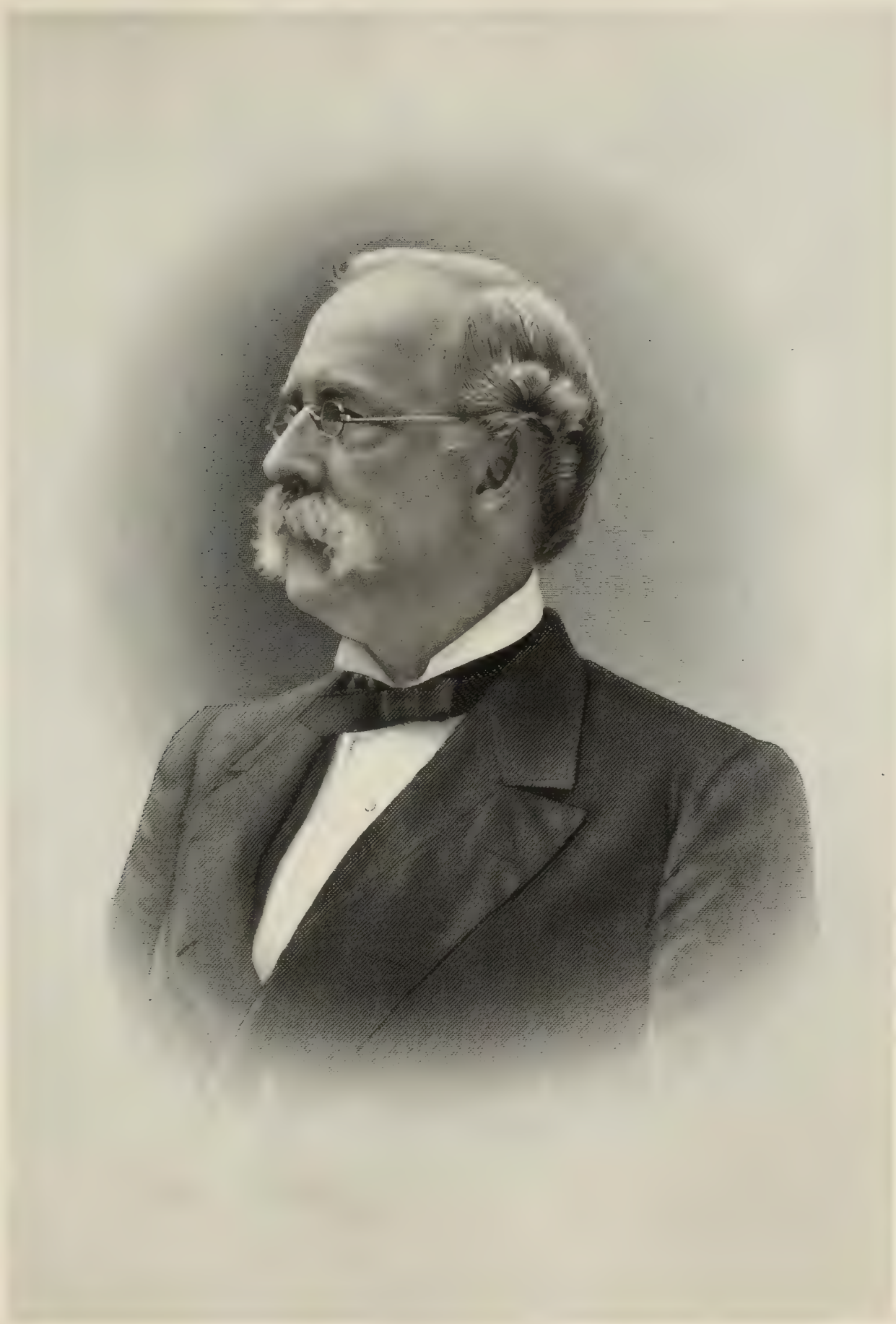
PHILIP LOUIS MOEN.

THE grandfather of Mr. Moen, a native of France, came to New York at about the close of the American Revolution. He brought with him his wife and a son, Augustus R., six years of age, and settled in Jefferson county, in New York state. Augustus R. married Sophie A. Le Clanché, and had his residence in Wilna, N. Y.

Philip Louis Moen, son of Augustus R. and Sophie A. (Le Clanché) Moen, was born in Wilna, November 13, 1824, and in 1830 came with his father's family to New England, and settled in Collinsville, Conn. In 1836 the family removed to Brooklyn, N. Y., and there, and at Collinsville, he received his early education. He afterwards attended the Columbia College Grammar School, with a view to entering college; but on account of a serious trouble with his eyes, which precluded study, his father decided to introduce him to a business career, taking him as clerk in the hardware store which he then carried on in New York, and afterwards making him a partner. Messrs. Ichabod and Charles Washburn, of Worcester, were engaged as partners in the business of drawing wire, and the firm acted as their selling agents in New York. Through Mr. Ichabod Washburn Mr. Moen became acquainted with his family, and on the 17th of November, 1846, married Eliza Ann Washburn, Mr. Washburn's daughter.

At the time of his marriage he removed to Worcester, and at once became associated with Henry S. Washburn and Charles Washburn, under the firm-name of Washburn, Moen & Co. Messrs. Ichabod and Charles Washburn had recently bought water-power at Quinsigamond village in Worcester, and had erected and equipped a mill for the rod-rolling and wire-drawing business. Up to that time they had no rolling mill, but bought wire rods both in England and in this country, and billets, which were rolled for them into wire rods at Fall River, Troy and Windsor Locks, Conn. Under their patronage the firm above mentioned of Washburn, Moen & Co., took the Quinsigamond Mill, and not only rolled their own rods, but a part of those used by the Messrs. Washburn in the mill under their own immediate management. The rods rolled at Quinsigamond were almost entirely made from scrap iron, and were a specialty of the Quinsigamond firm.

The firm of Washburn, Moen & Co. was dissolved January 12, 1849, and on the first of the same month the firm of I. & C. Washburn was dissolved. The brothers divided the property of the firm, Charles taking the mill at Quinsigamond village, and Ichabod taking the mill in Grove street, where the firm had been carrying on their business of wire-drawing. On the 1st of April, 1850, Mr. Moen became a partner with his father-in-law, Ichabod Washburn, under the firm-name of I. Washburn & Moen, and the connection continued until the death of Mr. Washburn in 1868. Various kinds of wire were, one after another, added to the product of the Grove Street Mill, under the eye of Mr. Washburn. Card wire, piano-forte wire, crinoline wire, telegraph wire, barbed-fencing wire, bale tie wire, electric wires, wire rope,



P. H. Allen

wire nails, and submarine telegraph cables, all became important items and found departments for their manufacture in the extensive works of I. Washburn & Moen.

In 1853 Henry S. Washburn and Charles F. Washburn formed a partnership under the firm-name of Henry S. Washburn & Co., and continued the business of rolling rods and drawing wire at Quinsigamond village, supplying the firm of I. Washburn & Moen with a part of their rods, as at that time they had no rolling-mill. The firm of Henry S. Washburn & Co. was dissolved in 1857, and their business was continued by Charles Washburn and Charles F. Washburn, under the name of Charles Washburn & Son. Until 1865 I. Washburn & Moen relied on the Quinsigamond Mill for a supply of rods, until the destruction of that mill by fire. On the 2d of January, 1865, I. Washburn & Moen changed their copartnership to a corporation under the name of the I. Washburn & Moen Wire Works, for the manufacture of wire and wire rods, with a capital of \$500,000. In the same year the Quinsigamond Iron and Wire Works, which succeeded to the business of Charles Washburn & Son, was organized, and on the 27th of November, 1866, a petition was filed to form a corporation "for making wire and wire rods, cotton yarn and goods, and to be incorporated under the title of the Washburn & Moen Wire Works, with a capital of six hundred thousand dollars." On the 24th of February, 1868, the Quinsigamond Iron and Wire Works and the Washburn & Moen Wire Works were consolidated under the name of the Washburn & Moen Manufacturing Company, with a capital of a million dollars, and authority was granted, May 20, 1869, to increase this amount to a million and a half, and in 1892 authority was granted to increase to ten millions. The present capital of the company is four millions. After the increase of capital in 1869, a rolling-mill was built in connection with the Grove Street Mill. This was what is called a Continuous Mill, that is, a mill in which the rolls are placed in successive parallel lines, and the rods to be rolled pass automatically through guides from one pair of rolls to the next, until they are rolled to the required size.

One of the most important items in the products of the company is the barbed fencing-wire, an article which has been of almost incalculable advantage to the farmer. The old method of fencing with posts and rails, or timber, not only involved great cost and a considerable loss of land, particularly where what is called the Virginia fence was used, but in many sections of the country drew too heavily on the forests of the neighborhood. In 1871 it was calculated that in the Union at that time the cost of fencing was \$1,747,549,931, and the annual cost of repairs \$93,963,187, and that the total loss of land amounted to fifty million acres. The wire fence requires less room, shades no vegetation, does not feel high winds, makes no drifts of snow, and does not winter-kill. Up to 1881 twelve hundred and twenty-nine patents had been issued relating to wire-fencing. Up to 1873 plain round wire was largely used, but in that year the manufacture of barbed wire was begun at De Kalb, Ill., by J. F. Glidden, a farmer in that town. It was first made by hand, and three boys and two men could make fifty pounds per day. In 1874 the twisting was done by horse-power, and three boys and two men could make one hundred and fifty pounds per day. By the use of machinery one man can now make daily two thousand pounds, or over five and a half miles in ten hours.

In 1876 the Washburn & Moen Manufacturing Company came into possession of the underlying patents of barbed wire, and have since bought more than two hundred and fifty patents upon the wire and machinery. At the present time the amount of barbed wire used in the country is nearly one hundred and seventy-five thousand tons, of which more than twenty thousand tons are made by the Washburn & Moen Manufacturing Company. The amount used annually increases as the cost dimin-

ishes, and with increasing facilities for its manufacture, its cost has been gradually reduced from eighteen cents to less than three cents per pound.

It is unnecessary to refer in detail to the various forms of wire entering into the product of the Washburn & Moen Manufacturing Company. It is sufficient to say that the product includes all kinds and sizes of copper, steel, and iron wire, from the smallest electric wire to combination wires in the form of submarine cables, ships' rigging and cables for suspension bridges. In addition to the plants of the company in Grove street, Worcester, and at Quinsigamond village, the company own extensive mills at Waukegan, Ill., on the west shore of Lake Michigan. The number of hands employed in all the mills of the company exceeds four thousand, with a payroll of the Worcester mills alone of \$36,000 per week. Five hundred to six hundred tons of wire are daily used, and the annual product exceeds one hundred and eighty thousand tons. The plant in Worcester covers about twenty acres, and that at Quinsigamond village about seventy. Eight thousand horse-power is required, and the coal principally used is West Virginia bituminous. The exports of the company to South and Central America and Australia are considerable. Mr. Ichabod Washburn died in 1868, and until then he was the president of the company and Mr. Moen treasurer. Under Mr. Moen's management the finances of the company were ably conducted, and, indeed, to his intelligent judgment and skill much of the great success of the company was due. After Mr. Washburn's death Mr. Moen became president, and from 1874 until his death was both president and treasurer. Mr. Moen died in Worcester April 23, 1891, and since that time William E. Rice has served as president and Mr. Moen's son, Philip W. Moen, has been treasurer and general manager.

It must be apparent to every reader of this sketch that such an establishment as that, which during its brilliant career was under the management of Mr. Moen, requires for its safe and conservative direction the highest order of administrative and executive talent. Such Mr. Moen possessed, and there is every reason to believe that under the legitimate operation of the laws of heredity they have descended to his son. Notwithstanding the demands of his manufacturing business, Mr. Moen was called on by his fellow-citizens to lend advice and counsel in the management of various institutions in his adopted city. He was vice-president of the State Mutual Life Insurance Company of Worcester, and succeeded Alexander H. Bullock as president until the next annual election, when he declined further service. He was a director in the Central National Bank of Worcester thirty years; trustee and vice-president of the People's Savings Bank; president of the Board of Trustees of the Washburn Memorial Hospital; trustee and treasurer of the Worcester Polytechnic Institute, a member of the School Board, and presidential elector in 1884 on the Republican ticket.

Mr. Moen died intestate, and thus made no public bequests; but during his career in Worcester he was always a liberal contributor to every cause, religious, educational, charitable, or political, which he believed would advance the social, mental, and moral welfare of the community.

Mr. Moen married, first, November 17, 1846, Eliza Ann, daughter of Ichabod and Ann (Brown) Washburn, who was the mother of one child, who died at the age of three years. He married, second, Maria S., daughter of Peter and Dorothy Grant, of Lyme, N. H., the mother of three children now living: Philip W., already referred to as the treasurer and general manager of the Washburn & Moen Manufacturing Company, who married Margaret Brown, daughter of Thomas and Elizabeth (Leishman) Struthers; Sophie; and Alice Grant, who married Arthur E. Childs.

By the death of Mr. Moen, which occurred, as has been stated, April 23, 1891,



George Crompton

the city of Worcester lost a citizen whose contributions to its prosperity and growth have not been exceeded by any in its long and honorable list of enterprising and successful men.

GEORGE CROMPTON.

IN 1836, William Crompton, a native of Lancashire, England, came to New England. He was a weaver by trade, a man possessing an alert and sagacious mind, who came to America expecting to find a broader and freer field for the display of his mechanical genius. He entered the employ of Crocker & Richmond in Taunton, Mass., and before he had been operating in their mills a year, he secured a patent for a power-loom to weave figures in cloth. In 1838 he went to England, and, after securing a patent there, returned to the United States in 1839, and introduced his loom into the Middlesex Mills in Lowell. Up to that time hand-loom had been exclusively used in all countries for the weaving of fancy woollens. In the mills of Crocker & Richmond, where the invention was first used, it was applied to the weaving of fancy cottons. The cotton loom, which Mr. Crompton had introduced into the Taunton Mills, was carried to Lowell, and, after a thorough investigation of its operation, Mr. James Cook, the agent of the Middlesex Mills, and Mr. Edward Winslow, a machinist in the mills, altered a cassimere loom to a Crompton loom, and worked it with such success that all the cassimere looms in the mills were at once altered.

The next step taken by Mr. Crompton in the general introduction of his loom was to contract with Phelps and Bickford, loom manufacturers in Worcester, to build his looms upon a royalty. After the expiration of his patent, he removed to Millbury, Mass., and engaged in the manufacture of cotton and woollen goods. At a later time, encountering financial troubles, he removed to Windsor, Conn., where he lived to the advanced age of eighty-five, dying in May, 1891.

George Crompton, the subject of this sketch, was the son of the above William Crompton and his wife, Sarah Low.

He was born in Tottington, Lancashire, England, March 23, 1829, and came to New England with his father in 1838. He was educated in the public schools of Taunton and Worcester and at the Millbury Academy, and began his business career as a bookkeeper in the employ of his father. After the failure of his father, he was employed in Colt's Pistol Factory in Hartford, Conn., where he remained about a year. After the expiration of the patent on the Crompton loom, it was renewed in 1851 for seven years, and Mr. Crompton removed to Worcester, and, associating himself with Merrill E. Furbush, began the manufacture of his father's loom. The business of the firm was carried on in different places until August 1, 1859, when the firm of Furbush & Crompton was dissolved. Mr. Crompton continued the business, buying what was called the Red Mill, in which the firm had been operating under a lease. In 1860 he built a new mill, a substantial brick building, three stories high, containing, exclusive of an L and engine-house, more than twenty thousand square feet of flooring. Until 1857 the firm of Furbush & Crompton manufactured narrow looms, but in that year they brought out a fast, broad, fancy loom with all the loom improvements up to that date. In the new looms the speed was increased from forty-five to eighty-five picks per minute.

Under the terms of the dissolution of the firm of Furbush & Crompton the patents owned by them were territorially divided, Mr. Crompton holding the New

England states and the state of New York, and Mr. Furbush the remainder of the United States, and agreeing to make no looms of any description within the territory of Mr. Crompton. The business of Mr. Crompton was somewhat interfered with in 1860 by William M. Bickford, who began to build all kinds of the Crompton loom. A lawsuit for infringement resulted in Mr. Crompton's favor, and on the death of Mr. Bickford, in 1863, he bought the patterns of the Bickford Mill, and that mill discontinued business.

During the War of the Rebellion, Mr. Crompton added to his business in connection with the manufacture of looms, that of making tools for the manufacture of gun-stocks. These tools were sold to gun-makers, and for several years composed a large and profitable part of his product. At the close of the war the entire resources of his mill were again applied to the making of looms, and until the death of Mr. Crompton were energetically and successfully used. Never content to rest on his oars, in the belief that perfection in his machine had been reached, he kept his mind constantly active in searching for weak points which might be strengthened, and imperfect actions which might be improved. In the course of his career he took out more than a hundred patents in the United States and a considerable number abroad.

Mr. Crompton died December 29, 1886, and in January, 1888, the Crompton Loom Works was incorporated with Mary Christina Crompton, the widow of Mr. Crompton, as president; Horace Wyman, vice-president and manager; and Justin A. Ware, secretary and treasurer. It now employs about eight hundred and fifty hands, and is one of the largest manufacturing establishments in Worcester. The product of the company finds its way into every part of the Union where looms are needed, and no inconsiderable amount of it is exported.

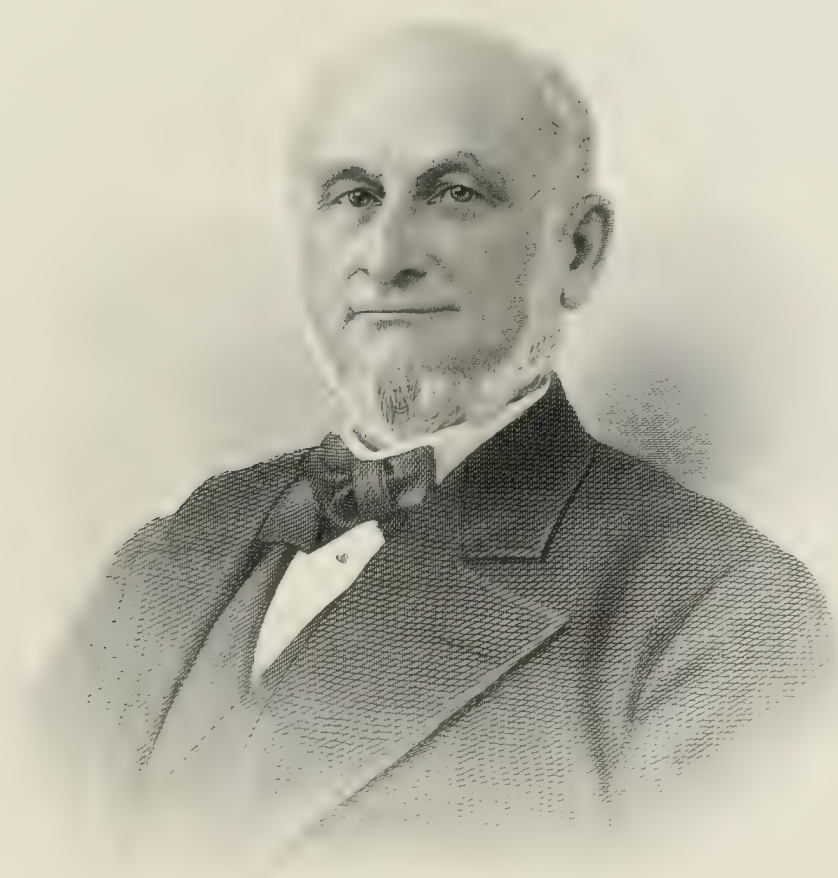
The foregoing imperfect sketch shows the marvellous rapidity with which, under the mingled influences of the fostering care of the government, and the unparalleled growth of our country, an enterprise like that of the Crompton Loom Works has been built up and maintained. It shows, too, the characteristics of Anglo-Saxon blood, which, wherever it may be found, whether in the old country or the new, are effectively displaying themselves in the civilization of the world. The industrious mechanic emigrating to the United States, and working at his bench in the mills of Crocker & Richmond in Taunton in 1836, conceived an idea, which in sixty years has revolutionized one of the most important industries of the world and become the foundation-stone of a manufacturing enterprise, of which, not only the city in which it is located, but the whole commonwealth of Massachusetts, may be justly proud.

Mr. Crompton married January 9, 1853, Mary Christina, daughter of Charles Pratt, of Cork, Ireland, and had twelve children. His three sons, Charles, George and Randolph Crompton, are connected with the Crompton Loom Works, just mentioned, Charles Crompton as president, and the others as directors.

The life of Mr. Crompton was devoted to his business, and the company, of which he was the founder, is a worthy memorial of his ingenuity, industry, energy, executive ability and skill. Though averse to any active participation in politics, he served at various times as a member of the Council and of the Board of Aldermen of Worcester, and in 1871 was a candidate for Mayor.

Mr. Crompton, although he held aloof from politics, was a public-spirited man. He took the deepest interest in anything which would add to the improvement or the adornment of Worcester. It is owing to him that Worcester points with pride to her beautiful Soldiers' Monument, designed by his friend, the famous sculptor, Randolph Rogers.

Mrs. Crompton died December 17, 1895.



George C. Crompton.

GEORGE DRAPER.

IN the reign of Queen Elizabeth there was born in Heptonstall, Yorkshire, England, a man named Thomas Draper. He was descended from either William, John or Henry le Drapour, who derived their name from their occupation of manufacturing or fulling cloth. Thomas Draper himself was a clothier and fuller, and so strongly developed was the mechanical ingenuity and talent, which he had inherited from his ancestors, that it has by the inscrutable law of heredity been transmitted in no diminished force to his descendants. James Draper, his fourth child, was born in Heptonstall in 1618, and there married, April 21, 1646, Miriam, daughter of Gideon and Grace (Eastwood) Stansfield, of Wadsworth, Yorkshire. It is not known with accuracy when he came to New England, but his arrival was before 1650, as in that year, or thereabouts, a daughter Susanna was born in Roxbury, where he first took up his residence. Like his ancestors he was a weaver, and is so described in documents now extant. In 1656 a son John was born in Dedham, to which place he had removed shortly before, but before August 17, 1668, he had returned to Roxbury, as at that date a daughter Patience was born in that town. He died in Roxbury in July, 1694. James Draper, 2d, son of the above James, was born in Roxbury in 1654, and died in that town April 30, 1698. He married February 18, 1681, Abigail, daughter of Nathaniel and Hannah (Dwight) Whiting, of Dedham, and was, at least during a portion of his life, a cloth fuller in Dedham, which town, in 1683, granted permission to Nathaniel Whiting and James Draper "to erect a fulling-mill below the Corn Mills on the stream called 'Mother Brook.'"

James Whiting, 3d, son of the above, was born in 1691, and died in Dedham April 24, 1768. He married, first, May 2, 1716, Rachel, daughter of John and Mary Aldis, and, second, November 12, 1719, Abigail, daughter of Joshua and Elizabeth (Morris) Child, of Brookline, Mass. He seems to have deviated from the ways of his ancestors and to have followed the occupation of farming, in that part of Dedham which was then Stoughton. Abijah Draper, son of the above, was born in Dedham May 10, 1737, and died in that town May 1, 1780. He married, first, Alice, daughter of John and Elizabeth (Lovering) Eaton, of Dedham, April 8, 1762, and second, March 25, 1778, Desire, widow of Nathaniel Metcalf, and daughter of Ebenezer and Desire (Cushman) Foster. He was a major in the militia and commanded a body of minute men at Roxbury under Washington. His son, Ira Draper, was born in Dedham December 24, 1764, and died January 22, 1848. In the early part of the century he removed from Dedham to Weston, Mass., and later to Saugus. He was much engaged in the development of mechanical inventions, and in him the law of heredity, to which reference has been made, again asserted itself. He invented the first threshing machine, the "fly shuttle hand-loom," "the revolving temple" for keeping cloth extended in weaving, and became so conspicuous as an inventor that during the administration of John Quincy Adams he was a prominent candidate for United States Commissioner of Patents. He married, first, May 31, 1786, Lydia, daughter of Lemuel and Rebecca Richards, and, second, March 9, 1812, Abigail Richards, the sister of his first wife.

George Draper, the subject of this sketch, and the son of Ira and Abigail (Richards) Draper, was born in Weston, Mass., August 10, 1817. Until he was fifteen years of age he lived in Weston and Saugus, to which latter place his father removed when he was about five years old. He attended the public schools in Saugus, at

times assisting his father on his farm, and acquired in study at home an education in mathematics, which would have been impossible under public instruction. At the age of fifteen he entered the weaving department of the cotton mills in North Uxbridge, where he remained two years, and was then made superintendent and manager of a small cotton-sheeting mill in Walpole, Mass. A short time after he became overseer of weaving in a large mill at Three Rivers, in the town of Palmer, Mass., where he made an improvement in the temple for weaving, which his father had invented. In 1839 he was thrown out of employment, and after the exhaustion of his small amount of savings he took the position of an operative in the Massachusetts Cotton Mills in Lowell, at wages of \$5 per week. In 1843 he became designer in the extensive cassimere mills of Edward Harris, in Woonsocket, R. I., and in 1845 was appointed superintendent of one of the mills of the Otis Company, in Ware, Mass., at a later time being promoted to the position of superintendent of all the mills of the company. In 1853 he removed from Ware to Hopedale, a part of Milford, Mass., and went into partnership with his brother Ebenezer Daggett Draper in the manufacturing business. He soon after joined the Hopedale Community, an organization whose origin and purpose it is unnecessary here to explain. It is sufficient to say that it was formed about the year 1842, and was a joint-stock, practical, Christian association, with a mutual industrial arrangement, and united as to capital and profits. At the time of its dissolution it consisted of a village of about fifty dwellings and about two hundred and fifty inhabitants, and owned about six hundred acres of land and a hatchet and temple and shoe-box shop, which gave employment to eight or ten men, the remainder engaging in farming. As a result of its financial failure and dissolution in 1856 Mr. Draper and his brother took the property and paid its debts. The two small shops for the manufacture of hatchets, temples and shoe-boxes, which then passed into the possession of the two brothers, employing, perhaps, fifteen hands, have become one of the largest cotton-machinery manufacturing establishments of the world, employing more than seven hundred men. The Hopedale industries controlled by the Draper family are situated on Mill river, and consist of five different concerns, with about twenty buildings, mostly of brick, operated by both water and steam-power. One of these concerns, the Hopedale Machine Company, manufactures spoolers, warpers, twisting-machines, roving frames, machine-screws, and the Sawyer and Rabbeth spindles. Another, the Dutcher Temple Company, manufactures loom temples, Shaw knitting-machines, and the Draper automatic sprinklers. A third concern, doing business under the name of George Draper & Sons, manufactures spinning-rings, and the firm controlling it acts as agent for the products of the other concerns. A fourth, called the Hopedale Elastic Fabric Company, manufactures elastic webbing for suspenders and shoe-gores. A fifth, the Hopedale Machine Screw Company, has a large factory making all kinds of machine screws. In 1868 Ebenezer D. Draper retired from the business in which he had been associated with his brother George, and the firm of George Draper & Sons now consists of William F., George A. and Eben S. Draper, sons of George Draper, and William F. Draper, Jr., and George Otis Draper, sons of William F. Draper.

Mr. Draper was much more than the ordinary business man. The works at Hopedale, which he was so largely instrumental in establishing, have, almost without exception, been founded on patented inventions, and they have grown to their present size through building machinery different from that built by any other people in the country. In other words, his business was a peculiar one in this country—that of introducing patented improvements in cotton machinery.

Mr. Draper was a man of unbounded resources as an inventor, and probably

took out not less than a hundred patents in the United States Patent Office. Among the articles patented by him were devices for self-acting temples, railway head-eveners, parallel shuttle motion, a new form of let-off motion, a shuttle-guard for looms, a self-lubricating bearing for spindles, double-adjustable spinning rings, slasher warpers and bobbin holders for spooling. It has been said that the high-speed and power-saving spindles introduced by him will produce double the quantity of yarn before made, and that his improvements in speed and power utilization have saved power enough to make two water-powers like that of Lowell. His spinning-frame separators are in universal use in this country, and in general use in England. Aside from his Hopedale enterprises, he owned stock in many cotton-manufacturing concerns in New England, and was a large owner in the Shaw Stocking Works of Lowell, the Glasgow Thread Company of Worcester, and the Glasgow Yarn Mills of Norwich, Conn. He was an active promoter of the construction of the Milford and Woonsocket Railroad, and of the Hopkinton Railroad.

In early days a Whig, afterwards a Free-Soiler, and then a Republican, and always deeply interested in the welfare of the party to which he belonged, the only conspicuous political position which he consented to fill was that of the presidency of the Home Market Club, an organization of which he was the originator and founder, and which includes on its rolls nearly two thousand members.

Mr. Draper was different from almost every active business man in the interest he always took in public affairs, and in the influence that he exerted on them. He never would accept a political office, but he was always in close touch with the leading public men of Massachusetts, from the time of the formation of the Republican party, and before, until his death. He was a great friend of William Lloyd Garrison, and was, with him, one of the pioneers of the abolition movement. He was also a personal friend and supporter of Governor Andrew; and, unlike many other business men during the Rebellion, he gave up all attention to business, and devoted himself to assisting the government in every way possible in prosecuting the war. In these years, while most business men advanced their fortunes rapidly, he not only did not increase his business at all, but rather suffered on account of his attention to public matters. Later he became very much interested in the Republican party, but especially in the question of protection, and there was probably no man in the United States who was better posted on this question, or who kept in closer communication with the prominent men in the country who were the champions of this idea. With William D. Kelley, of Pennsylvania, McKinley, of Ohio, Senator Hoar, of Massachusetts, and many other prominent champions of protection, he was in constant correspondence, and he wrote many articles on this subject which were extensively quoted.

Because of the interest that he took in public affairs, and the peculiar character of his business, there was probably no man in New England who had a wider acquaintance with men in all branches of life than he, and very few men who had a larger influence on the formation of public opinion. In fact, during the last few years of his life, substantially all of his time was given to the promotion of the protection sentiment, and the time that he devoted to the details of his business was very slight.

At the time of his death, although he had never taken any political position, the space devoted to his life by the newspapers of both city and country, was as extensive as that with which almost any man has been honored in this generation. During the war he was active in recruiting soldiers, and organized several companies, whose preliminary expenses he himself defrayed. 'The Soldiers' Home in Chelsea received from him a liberal annual gift. He gave to the town of Hopedale,

the incorporation of which was due to his efforts, a very handsome town hall, and the Unitarian Church, at Hopedale, of which he was a member, received from him many donations. His public and private charities were bountiful and unostentatious, and the comfort of men in his employ, the temperance cause and the Grand Army Posts, were constantly kept under his watchful and generous eye.

Mr. Draper married, March 6, 1839, Hannah, daughter of Benjamin and Anna Thwing, of Uxbridge, and died at the United States Hotel, in Boston, on Tuesday evening, June 7, 1887. His children have been: William F., born in Lowell, April 9, 1842; Georgiana T., born in Lowell, June 30, 1844, who died in infancy; Helen L., born in Lowell, July 11, 1845, who died August 10, 1847; Frances E., born in Ware, July 26, 1847; a son born in Ware, December 15, 1850, who died in infancy; Hannah T., born in Ware, April 11, 1853; George A., born in Hopedale, November 4, 1855; and Eben S., born in Hopedale, June 17, 1858.



WILLIAM F. DRAPER.

FEW lives include such variety, or such successful effort, as that of Gen. William F. Draper. War, business, invention, public affairs, are all included, and while he would make no claim to genius in either one, his success in all shows high native talent and a capacity for hard work. In active service during the War of the Rebellion, he rose from the rank of lieutenant to that of general, being one of the very few men now left in Massachusetts who attained that rank during the war. In business he started with his army savings, and became a millionaire. In public life he has held several important positions, and by his inventions, and the management of the inventions of others largely made under his direction, the art of cotton manufacture has advanced more than during any period since the days of Arkwright. He comes from good old New England stock, his ancestors on both sides having been residents of Massachusetts since about 1650. On his father's side a peculiarity has existed: all his male ancestors have been connected with the manufacture of cloth, and nearly all have at some time served an apprenticeship at arms.

The first Draper in this country owned and ran several woollen looms in Roxbury. His son built a fulling mill in Dedham, and the cotton-machinery manufacturing business which General Draper now directs, was commenced by an invention of his grandfather, Ira Draper, in 1820. His ancestry furnished a soldier in King Philip's War; a captain, James Draper, in the Colonial wars; and a major, Abijah Draper, his great-grandfather, in the Revolution. His own service, from 1861 to 1864, and his own business, have maintained and continued the family traditions. He was born in Lowell, Mass., April 9, 1842. His parents were George and Hannah Thwing Draper, both now deceased.

George Draper was a remarkable man for strength of character, energy and intellect, and left a record of usefulness excelled by few of his contemporaries. He carried on and greatly increased the machine-making business of the family, and largely built up the thriving town of Hopedale. He was the founder of the widely known and influential Home Market Club, which represents New England industries more generally than any other organization. He was, at his oldest son's birth, an overseer of weaving in the Massachusetts Cotton Mills at Lowell. Shortly afterward he became designer for the celebrated Edward Harris cassimeres at Woonsocket, R. I., and in a year or two more he was made superintendent of the mills of the Otis Company at Ware, Mass. From Ware he went to Hopedale, where he joined fortunes



William Z. Draper

with his brother, E. D. Draper, who was carrying on the business inherited from their father on a comparatively small scale and who was also president of the Hopedale Community, a socialistic organization intended to be based on practical Christianity, founded by Rev. Adin Ballou.

George Draper became a member of this body in which, while private property was allowed, the "instruments of production" were held practically in common; but owing to financial difficulties it was dissolved about 1857, the debts all being paid, and very largely by the Draper brothers. During all these years and up to August, 1861, the subject of our sketch was attending school, with intervals of practical work in his father's machine shop and in sundry cotton mills, where he was given opportunity to study, theoretically and practically, the detail of the cotton manufacture. In the fall of 1861 he was intending to enter Harvard, for which he had fitted, but the war put an end to his plans in this direction, and on the 9th of August, 1861, he enlisted in a local volunteer company which George Draper was instrumental in raising. The company became Company B of the Twenty-fifth Massachusetts, and William F. Draper was chosen second lieutenant. His war experience extended over nearly four years. First, in the Burnside Expedition he became signal officer on the General's staff. In this position he went through the battles of Roanoke Island, Newbern and Fort Macon, N. C., when he was promoted to be first lieutenant and returned to his regiment.

In August, 1862, he was commissioned captain in the Thirty-sixth Massachusetts, and joined his regiment just after the battle of South Mountain, Md. With the Thirty-sixth he went through the rest of the Antietam campaign and the battle of Fredericksburg, Va., and was then, with the Ninth Corps, sent to Kentucky, where several months were spent pursuing Morgan's cavalry and sundry guerrillas.

In June, 1863, his regiment joined Grant's army at Vicksburg, taking part in the siege and capture of that place, and subsequently in the march to Jackson and the fighting in that locality. Its muster roll was reduced by fighting and sickness from six hundred and fifty in June to one hundred and ninety-eight in September. During this campaign he was commissioned major of the regiment.

In August, 1863, the Ninth Corps returned to Kentucky, and marched through Cumberland Gap into East Tennessee. Staying there through the winter, the siege of Knoxville was sustained, and the battles of Blue Springs, Campbell's Station and Strawberry Plains, were fought. Maj. Draper commanded the regiment through this terrible campaign, the senior officer, Col. Goodell, having been wounded in the first battle at Blue Springs.

In the spring of 1864 the Thirty-sixth came east to Annapolis, Md., and was partially recruited, then joining the Army of the Potomac. In the battle of the Wilderness, on the 6th of May, Col. Draper was shot through the body while leading his regiment in the capture of a rifle pit. After having been left on the field as hopelessly wounded, and being captured by, and recaptured from, the rebels, the bullet was cut from his body and he was sent to a hospital in Washington. He was commissioned lieutenant-colonel from this date, but his regiment was too small, from loss in the severe fighting, to muster a full colonel.

After partially recovering from his wound he joined his regiment during the siege of Petersburg, and took command of his brigade at the Weldon Railroad engagement. A month later, at Poplar Grove Church and Pegram Farm, his division was severely engaged and cut off from the main army. His regiment was the only one of the brigade that maintained its organization, and they brought back the colors of several others, Colonel Draper himself bringing out the colors of the Thirty-

sixth, which he had used for a rallying point. He was there again wounded in the shoulder by a nearly spent ball. On the 12th of October, 1864, his service expired, and he accepted a discharge, as his wounds were troublesome. He was brevetted colonel and also brigadier general for "gallant service during the war." Both regiments he was connected with were "fighting regiments," the Twenty-fifth Massachusetts losing seventy per cent. of their number, killed or wounded, in the engagement at Cold Harbor, a record broken by but three other regiments in the whole army, while the Thirty-sixth Massachusetts, which he commanded in the campaign beginning with the Wilderness, had every field and line officer except one killed or wounded, and more than three-fourths of its enlisted men.

After the war General Draper accepted employment from the firm of E. D. & G. Draper, before referred to, as a designer and salesman. In April, 1868, Mr. E. D. Draper retiring, his interest was bought by General Draper, who became a partner with his father under the firm-name of Geo. Draper & Son. Their business was successful and increased rapidly, and since his father's death, in 1887, General Draper has been the head of the firm of George Draper & Sons, widely known as the leading introducers of improvements in cotton machinery in this country.

Outside of his own business he has been connected with many other large manufacturing concerns, and is now president or director in corporations covering the manufacture of machinery, cotton cloth, shoes, electrical goods, and in various railroads, gas and water, and insurance companies, etc. While eminently successful pecuniarily, General Draper takes pride in the fact that he has returned to the community, through the improvements he has originated and introduced, many times the value of the property he has acquired. The spindles perfected and introduced by his firm have doubled the production and halved the cost of spinning cotton yarn—a saving which, capitalized, would exceed \$50,000,000 in this country alone, and several times that if their adoption, now general, in other countries is reckoned.

He has just brought out a new loom which bids fair to do for weaving what the improved spindles have done for spinning; and he has other radical and important advances in manufacture in view, which he proposes to inaugurate if his life is spared. He has personally taken out over fifty patents, mostly relating to spinning and weaving machinery. Much litigation has been developed during the introduction of these improvements, in which General Draper has been associated with the most eminent counsel and experts in the country, and he is himself recognized as the leading mechanical expert on the subjects, his writings upon them being considered as standard. His public life, outside of his military service, has until recently been only incidental in his career. He served as a member of Governor Long's staff three years; he was a delegate to the Republican National Convention at Cincinnati in 1876, which nominated President Hayes, and an elector-at-large, voting for President Harrison. He was also chairman of the committee on resolutions in the Republican State Convention of 1887, and two other years a member of the same committee.

In 1888 he was a candidate for the Republican nomination for governor of Massachusetts, being strongly backed by the soldier vote. He was defeated by Governor Ames after an interesting preliminary struggle.

He succeeded his father as president of the Home Market Club, before referred to, which is the strongest and most influential protective organization in New England. He is also a member and officer of the Arkwright Club, which is especially devoted to textile industries.

In 1892 he was unanimously nominated for Congress by the Republicans of the Eleventh Massachusetts District, then Democratic, and, after a speaking contest with



W. L. Williams

Hon. Geo. Fred. Williams, which attracted wide attention outside the district and the state, he was elected by over two thousand five hundred plurality. In the House he served on the Foreign Affairs and Patent Committees, and was at once recognized as a working member, influential on business questions. His speeches on the tariff and on Hawaii have been widely quoted. In the election of 1894 his plurality was trebled.

General Draper married, in 1862, while at home from the army for four days, Lydia, the adopted daughter of Hon. David Joy, of Nantucket, Mass. She died in 1884, leaving five children, four sons and a daughter.

In 1890 he married again—the marriage being, perhaps, the only one on record where a general in the Union Army wedded a daughter of a general in the Confederate Army. His second wife was Miss Susan Preston, daughter of Gen. William Preston, of Kentucky, Minister to Spain under Buchanan, colonel in the Mexican War, and major-general during the Rebellion. One daughter, Margaret Preston, is the result of this marriage.

In religion he is, and has been, a Unitarian, and a member of the parish of that denomination at Hopedale. Socially the general is well known from a large acquaintance, both at home and abroad. His houses at Washington and Hopedale are centres of hospitality, and Mrs. Draper is a prominent figure in the gayeties of the capital city. He is a member of many clubs, and also of various patriotic societies, including the Loyal Legion, Grand Army of the Republic, Sons of the Revolution, and the Society of Colonial Wars, of which he was the first president for the state of Massachusetts.

JOHN HOWARD WHITTEMORE.

JOHN HOWARD WHITTEMORE is descended from Thomas and Mary Whittemore, of Hitchins, in the county of Hereford, England. Their son, Thomas, who was baptized January 6, 1593, came to New England and settled in Malden, Mass. He had three wives, the first and third named respectively Sarah and Hannah, and the second, Sarah Deardes; and died in 1661. His son, Daniel, born in 1633, probably in England, married, March 7, 1662, Mary Mellens, and had a son John, who was born in Malden February 12, 1665, and married Ruth Basset. Joseph Whittemore, son of John and Ruth Whittemore, was born in Malden in 1698 and married, October 9, 1734, Ann Slate, at Mansfield, Conn. Joseph Whittemore, son of Joseph and Ann Whittemore, was born July 4, 1736, and married, in 1763, Sarah Howe. Samuel Whittemore, son of Joseph and Sarah Whittemore, was born January 12, 1767, and died in Bolton, Conn., in 1801. He married at Mansfield, Conn., January 1, 1794, Sally Wales, and had the following children: Evelina, born in Mansfield, December 29, 1796; Harriet Howe, 1798; Williams Howe, born in Bolton, February 2, 1800, and Julia Ann Sally, born in Bolton, May 13, 1802. Williams Howe Whittemore, son of Samuel and Sally Whittemore, was the father of the subject of this sketch. He graduated at Yale College in 1825, and at the Yale Divinity School in 1829, and was settled in Rye, N. Y., from May, 1829, to April, 1832. He was ordained as an evangelist at Wilton, Conn., September 26, 1831, and preached in Abington village, in the town of Pomfret, Conn., until he was called to Charlton, Mass., where he was installed August 21, 1833. He remained in Charlton until January, 1836, when on the 16th of November in that year he was settled in Southbury, Conn. In the month of September, 1851, he removed to New Haven,

Conn., where he lived until 1868, engaged in the occupations of preaching and teaching. In 1868 he removed to the home of his daughter in Brooklyn, N. Y., and died in Rye, N. Y., July 25, 1885, only seven months before the death of his wife, which occurred February 25, 1886. He married, December 22, 1831, Maria, daughter of Ebenezer Clark, of Rye, and his children were : Williams Clark, born in Charlton, Mass., December 16, 1833; Edward Payson, January 24, 1836; John Howard, October 3, 1837, and Emma Parsons, August 3, 1839.

John Howard Whittemore, the subject of this sketch, and the son of Rev. Williams Howe and Maria (Clark) Whittemore, was born in Southbury, Conn., October 3, 1837. He attended the public schools of Southbury, until he was ten years of age, when he became a pupil for four years in the Collegiate and Commercial Institute of Gen. William H. Russell, in New Haven, with the intention of entering Yale College. Unforeseen causes, however, led to an abandonment of a college career, and at the completion of his academic education he went to New York and was associated in business three or four years with Elliott F. Shepard and Edwin D. Morgan, Jr., who were engaged in a commission business under the firm-name of Shepard & Morgan. In 1857, the firm having dissolved, he spent a few months in the private office of Edwin D. Morgan, Sr., and in March, 1858, removed to Naugatuck, Conn., where he entered the employ of E. C. Tuttle & Co., manufacturers of farm tools, remaining with them until they were burned out in July, 1858. In September, 1858, he formed a partnership with Bronson B. Tuttle, under the firm-name of Tuttle & Whittemore, to engage in the malleable iron business in Naugatuck. The firm continued until about 1870, when it was organized as a joint stock corporation, under the name of The Tuttle & Whittemore Company, and ten years later as the Naugatuck Malleable Iron Company, with a capital of \$100,000. Mr. Whittemore has been president and treasurer since the organization of the first-named company. Under his management the company has steadily enlarged its operations, and now employs about four hundred hands, supplying with its castings other manufacturers in the northeastern states of the Union. As outgrowths of the Naugatuck establishment and largely inspired by the energy and enterprise of Mr. Whittemore, other malleable iron companies have been organized in Chicago, Indianapolis, Toledo, Cleveland, Troy, Bridgeport and New Britain. He is a director in all of these companies, and president of those in Bridgeport and Naugatuck. In these companies, in the management of which he is directly or indirectly active, about seven thousand hands are employed.

The business career of Mr. Whittemore, concisely stated in the above record, indicates clearly the character of the man. The successful management of a great enterprise requires a sound mind as a basis, and accompanying that, energy and force while sailing in deep water, prudence and caution when rocks and shoals are on either hand, good judgment to estimate the demands of the market to-day and a wise foresight to measure those of the market to-morrow, and above and beyond all an unswerving integrity which shall command the confidence of those with whom he deals. These are the traits of character which Mr. Whittemore possesses, and the wealth which he has accumulated is as much their legitimate and necessary product as the castings of his mills are the result of the fidelity and skill of the workmen.

But the wealth, all of which has been the fruit of his labors, he has not treated as exclusively his own. Naugatuck, the town in which he lives, and in which the company especially under his charge is located, bears ample witness to his liberality and public spirit. The writer of this sketch, whose knowledge of the towns in New England is far from limited, can recall none owing so much to the generosity of a



Amos Paul

single man as Naugatuck. A school building which, with land improvements, cost \$116,000, a cemetery costing \$24,000, a parish house costing \$26,700, a public library and endowment fund costing \$133,000, and various lesser public works, calculated to enhance the beauty of the town and add to the convenience of its people, are monuments to the noble spirit of their benefactor.

It is useless to inquire what offices such a man has held, or is holding. Public office can add nothing to the honor in which he is held by his fellow-citizens. It is sufficient to say that, so far as public affairs are concerned, his only wish is that his town, his state and his country may be governed with a single eye to their permanent, social, and intellectual and moral welfare. He has, however, served his town as representative, and in 1888 was a presidential elector at large on the Republican ticket.

Mr. Whittemore married, June 10, 1863, Julia Ann, daughter of Harris Spencer, of Naugatuck, and has had the following children: Arthur Harris, born November 25, 1864, who manages the sales of the Naugatuck Malleable Iron Company; John Howard, born February 24, 1872, who died May 27, 1887; Gertrude Buckingham, born August 31, 1874; and Julia, born May 14, 1876, who died July 30, 1876.



AMOS PAUL.

IN the latter part of the last, and the early part of the present century, there lived in that part of Kittery, Maine, which in 1810 was incorporated as the town of Eliot, a millwright named Nathaniel Paul. He married Mary A. Masters, and early in life removed to Newmarket, N. H. In the latter town his son, Amos Paul, the subject of this sketch, was born April 29, 1810. Amos was the third son of his parents, and until the death of his father, in 1827, he remained at home attending the public schools of his native town. After his father's death he was apprenticed to James Derby, a machinist, in Exeter, N. H., and remained there working at his trade until 1832. He then removed to South Newmarket and worked two years as journeyman in the iron foundry of Drake, Paul & Co. In 1834 in company with George O. Hilton, John B. Rider and Joseph G. Skinner, he bought the works, and organized a corporation under the name of the Newmarket Iron Foundry. Of this corporation Mr. Paul was made president, Mr. Hilton treasurer and manager, and the other two owners with Mr. Paul were chosen directors.

The corporation continued under the management of Mr. Hilton two years, and he was then succeeded by Mr. Paul. The products of the foundry were chiefly castings for cotton and woollen mills, though at one time the manufacture of stoves formed a part of its business. Under the skillful management of Mr. Paul the company was established on a solid and profitable foundation, and though suffering severe losses by fire, its works were at once rebuilt, and continued in its successful career.

In 1846 the Swamscot Machine Company of South Newmarket was incorporated by Mr. Paul, associated with Walter E. Hawes and Seneca C. Kennard, and the management of the affairs of this company was added to his duties as president and manager of the Newmarket Iron Foundry. In 1865 the Swamscot Machine Company bought the works of the foundry company, and, after the consolidation of the two companies, conducted the whole business under its own name. The operations of the company covered the manufacture of stationary and portable steam engines,

locomotive and other steam boilers, steam boxes, wrought-iron galvanized pipe, gas-fittings and various specialties constructed under patents owned by the company.

The plant of the Swamscot Machine Company was most eligibly situated for a convenient performance of its work. It covered about ten acres of land on both sides of the Boston and Maine Railroad, and was bounded on one side by the navigable waters of the Swamscot river. It would be impossible to find a situation better adapted to the wants of a manufacturing company in the way of transportation facilities. For many years from two hundred and fifty to three hundred hands were employed, requiring a monthly pay-roll of about \$12,000. A direct result of the operations of the company was the building up of the village of South Newmarket, and the attainment of its chief means of support. Mr. Paul established his residence in the neighborhood of his works, and as the father of the village, looked incessantly and kindly after the interests and welfare of its people. Connected with his homestead was a farm of one hundred and fifty acres, and in the oversight of its careful cultivation he found relief from his business labors and his chief recreation.

The sterling traits of character possessed by Mr. Paul were thoroughly appreciated, not only by his fellow-citizens, but by those beyond the limits of his daily life with whom he had come in contact in his business career. He was a Republican presidential elector in 1868, and many years a director in the Boston and Maine Railroad. An early abolitionist he naturally drifted through the preparatory scenes of Free-Soilism into the Republican party in which he found, not only a congenial anti-slavery sentiment, but also an advocacy of the principles of protection to home industries to which he had always been attached. In religious matters his mind was inclined to the liberal belief in one God and the eventual salvation of all the souls of men. He attended the Universalist Church in South Newmarket, and was always generous in extending to it aid and support.

In the latest years of his life Mr. Paul enjoyed retirement from business cares with a comfort somewhat impaired by the infirmities of age, and died at his home January 31, 1896. His first wife, whom he married December 6, 1836, was Mary A., daughter of Moses Randlett, of Epping, N. H., who was the mother of three children: Mary H., Amos, and Charles R., all of whom are deceased. Mrs. Paul died May 18, 1860. His second wife was Harriet A., daughter of Thomas Randlett, of Newburyport, who died April 13, 1894, leaving two children, now living, Isabel and Harriet.

JOHN HENRY COFFING.

THE subject of this sketch was descended from the Coffin family of Nantucket, whose name through every generation has been a conspicuous one on that island. For some reason, never disclosed, the father of Mr. Coffing saw fit to add the final letter to his name, and thus in a measure he was deprived of the glamour which has always attached to the name of his ancestry.

Mr. Coffing was the son of Capt. John C. Coffing, and was born in Salisbury, Conn., February 3, 1811. His father at the time of his birth was an iron manufacturer in Salisbury, but in 1829 erected a furnace in Richmond, Mass., and in 1833 another in Van Deusenville, an outlying district in the town of Great Barrington, Mass. Mr. Coffing in his earliest boyhood attended the public schools of Salisbury, and at the age of twelve years entered the military school of Capt. Alden Partridge, in Vermont. At a later time he attended the academy in Westfield, Mass., and completed his education under the direction of Rev. Dr. Mark Hopkins. When old enough



John M. Hooper



M A Furber

to enter on a business career, he became a clerk in his father's factory store in Salisbury, where he remained, assisting also his father in his manufacturing business, until 1836, when he removed to Van Deusenville and engaged in the manufacture of pig iron in the furnace built by his father three years before. In 1844 the furnaces at Van Deusenville and Richmond were incorporated under the name of the Richmond Iron Works, and at a later date a furnace in Cheshire, Mass, was added to the property of the corporation. Retaining his home in Van Deusenville, he was the active manager of the company, and many years its president.

Under the management of Mr. Coffing the business of the corporation was a prosperous one, and during the late war, large sales of its iron were made to the government for the manufacture of cannon. Aside from his management of the Richmond Iron Works, he was, in 1850, active in organizing the Monument Cotton and Woollen Mill at Housatonic, and continued his connection with them in the manufacture of cotton warps until 1867. He was a director in the Mahaiwe National Bank, in Great Barrington, and the Housatonic National Bank, in Stockbridge, and a trustee in the Great Barrington Savings Bank. He was also interested in the Stockbridge and Pittsfield Railroad, and in the Berkshire Road, of which he was many years president. Full of public spirit, he was active in promoting enterprises calculated to advance the welfare of his town, and the erection of Trinity Church, in Van Deusenville, was due to his large contributions and his services as superintendent of its construction. In the contest between the advocates of a monument, and those of a memorial hall, in honor of deceased soldiers, he took sides with the former, and furnished not only the model for the monument, but a very considerable portion of the money needed for its erection. During the war he was one of that noble band, scattered throughout the state, by whose exertions the ranks of the Northern army were kept full, and to whom a debt of gratitude is due only less weighty than that to the soldiers themselves.

Mr. Coffing, in his early years a Whig, became later a Republican, and advocated the measures of his party with voice and pen. Public office with its allurements he never sought, and only such positions as made moderate demands on his time was he willing to accept. The performance of duties attaching to the management of town affairs, he believed, imposed an obligation on every good citizen, and the position of assessor and that of delegate to the National Republican Convention in 1860, afforded the only instances of his yielding to the demands of his fellow-citizens for his services in their behalf.

Mr. Coffing married, February 27, 1833, Rebecca F. Bostwick, of Salisbury, Conn., and had no children. In 1867 he retired from business, and devoting his later years to the management of his farm, died at home August 14, 1882.

MERRILL AUGUSTUS FURBUSH.

THE first practical power-loom was devised in 1785 by Dr. Edmund Cartwright, of Derbyshire, a minister of the gospel and ignorant of mechanics. He spent £30,000 in endeavoring to perfect his loom, and in 1808 received a grant from Parliament of £10,000 for his services. Improvements were rapidly made upon the Cartwright loom by other inventors, and it was soon brought into general use for both cotton and woollen goods. Various kinds of looms were manufactured from this time up to 1837, when a loom to weave a certain pattern of goods which other looms could not weave, was patented by George Crompton, and he manufac-

tured this loom with varying successes until about 1844, when Merrill A. Furbush went to Worcester and associated himself with Crompton, under the name of Furbush & Crompton, for the manufacture of these looms. Mr. Furbush was a native of Worcester county, born in the town of Princeton at the foot of Wachusett, August 7, 1817.

With that keen foresight and good judgment which were so clearly displayed in his subsequent successful business career, he realized that the manufacturing industries of this country would be rapidly developed, and he determined to secure a practical knowledge of the business of building looms and woollen machinery generally. He passed some time in the Chelmsford Machine Works, and also in the Barre and other mills. He not only brought to the new firm of Furbush & Crompton a thorough knowledge of the practical side of manufacturing, but a general business and financial ability that gave the new firm a prominent position among the manufacturing institutions of Worcester. The firm of Furbush & Crompton continued until 1859, when the partnership was dissolved. The patents granted to and owned by the firm were in part for improvements in double-reversed motion, of which they were the sole owners. These patents were by mutual agreements territorially divided, Mr. Furbush to have the whole of the United States except New England and New York, and Crompton was debarred from making looms of any kind whatever in Furbush's territory. Mr. Furbush removed to Philadelphia in 1859, and began the manufacture of looms and general woollen machinery at the corner of Fifteenth and Willow streets. Under his skillful management the business rapidly developed, and in 1863 the works were removed to Camden, N. J., where he still further increased his facilities until the institution, at the time of his death, March 31, 1887, covered seven acres of ground. The establishment is known as the M. A. Furbush & Son Machine Company, Mr. M. A. Furbush, Jr., being the treasurer and general manager.

Mr. Furbush was twice married, his second wife being Caroline C. Stone, who was born in Groton, N. Y., August 3, 1835. Politically Mr. Furbush was a staunch Republican, and never swerved from the principles of that party. He was a leading member of the Church of the Messiah (Universalist) in Philadelphia, and for a number of years one of its most honored and esteemed trustees. As a type of manhood of the sterling New England quality in its triple union of moral, mental and physical worth, Merrill A. Furbush would have been a marked man in any community. Decision of character, tact and sagacity were indicated in every line of his strong, earnest face, and when united with his excellent physique the picture is complete of a man born to achieve success in business and to command the confidence and respect of his associates. With fewer opportunities and less ability to turn them to his own advantage he would still have been a successful man by virtue of his native instincts of thrift and perseverance, habits of industry and temperance in all things. He did not covet financial station, but quietly mastered the principles and details of his immense business, and advanced by the force of personal merit to a station of large business responsibilities and always proved equal to the demands which were made upon him. His mind naturally and easily grasped the reason of things, and hence he was thoroughly practical in his work and affairs. In an age distinguished for mechanical skill and the application of force to the development of material resources, men of the quality of Mr. Furbush are absolutely indispensable. Metaphysicians and theorists are relegated to seclusion and practical thinkers and doers are advanced to leadership. The right of the subject of this sketch to a foremost place in this class was clearly recognized, and he was at the front in the line of business and social progress.



Geo. C. Fisk

GEORGE C. FISK.

A COLLECTION of the various sorts of cars that have done service in the different railroads of this country during the last fifty years would give an excellent idea of the great drama of civilization which has been played in welding the scattered settlements and communities of this vast continent into one great social, commercial and political whole. Such a collection would reveal the bold and rapid progress with which New England energy and thrift have passed from the supply of the mere bare necessities of life and commerce to the development of those comforts and refinements which indicate a people's social and political importance among the great nations of the civilized world. The railroads have been an incalculable factor not only in building up the commercial greatness of the United States, but also a corresponding development in those comforts and refinements of life which so materially prepare and pave the way for ambition in the domain of literature and polity, without whose achievements and lustre no nation attains the highest point of civilization. But the comforts must precede and make possible the diffusion of culture and knowledge; and the high grade of universal intelligence, which is the characteristic and pride of American civilization to-day, would never have been possible without the development of American railroads. All the highest achievements of culture, all the finest arts of civilization, are the creation of the leisure and refinement of thought and feeling which are the precious inheritance of comfort, and the expansion and diffusion of comfort is the great work the railroads have wrought for the American people. It is all compactly told in the marvellous changes and transformations that have been introduced into the building of cars within the last half century. In this great work which has been of as far-reaching importance as any political event of the century, New England enterprise and genius have led; and one of the pioneer industries of New England and one of pre-eminent importance to-day is the Wason Manufacturing Company, of which the subject of this sketch, Mr. George C. Fisk, is the present president.

The name of George C. Fisk is held in high honor in Springfield, as it also is from Halifax to San Francisco, and from the confines of Northern Canada to the Gulf of Mexico; and far beyond the boundaries of the United States, in the West Indies and in the South American republics, it is familiar to business and railroad men, and represents all those sterling qualities of energy and enterprise, strict integrity, thoroughness and capacity, which it is the proud boast of New England that the masters of her industries have always represented the world over. The career of Mr. Fisk, like that of most men who have become pre-eminent in the industrial history of this country, exemplifies once more that in the achievement of success character counts for more than merely adventitious circumstances. Starting without any advantages in life beyond those of a rugged constitution, a mind of great energy and resource, and a set purpose, Mr. Fisk has attained a most enviable position in the history of New England industrial enterprise. His career illustrates the possibilities which are open to every young man who is determined to achieve for himself a position and standing in the world, in spite of all obstacles of birth and education which may beset him.

Mr. George C. Fisk was born in Hinsdale, N. H., March 4, 1831, and, after a common-school education in the neighborhood, he set out to find an occupation for himself which would better his fortunes. He began work in a country store in his

native town. Finding that this occupation failed to open a field of activity suited to his taste and ambition, he decided, at the age of twenty, to tempt fortune elsewhere. In 1851 he moved to Springfield, carrying with him as his entire capital the sum of \$15. Not obtaining the employment in which he wished to engage, and his limited capital not permitting delay, he obtained a position in a dry-goods store, but left after a short time to work in a grocery. But as this did not seem to offer any better prospects than he had found in Hinsdale, after several months he determined to try his fortunes in the West. Having a friend in Cleveland, he thought that through him he might obtain introductions which might be of use to him in securing a situation, and he went to that city. Here he found some indefinite promises of work, but as it was not immediately forthcoming, and he urgently felt the necessity of making a start in some kind of business, he accepted employment as a book agent, and began selling Mrs. Harriet Beecher Stowe's "Uncle Tom's Cabin," on commission. At this he flourished for a time, but as it was not exactly to his tastes, and did not altogether suit his ambitions for a stable and promising occupation, he relinquished it to go still farther west. From Cleveland he went to Beloit, Wis., and sought employment in various directions. But the manner of conducting business, characteristic then of all new towns in the West, did not offer to him just the opportunities for advancement which he sought, and finding no avenue open which offered more than a bare livelihood, he began to think that he could find more steady and remunerative work in New England. In a word, he found that to succeed in the West, capital was just as necessary as it was in the East, and that without capital there was less inducement for industry and enterprise in the West at that time than in his own home. This conclusion brought him back to Springfield. Here he procured an engagement as bookkeeper for Eleazer Ripley, who was then just about to begin the manufacture of locomotives. While the machinery was being put into the establishment, Mr. Fisk went to Hinsdale to make a desk. A couple of weeks later Mr. Ripley sent for him to return to Springfield, as Mr. Thomas W. Wason, the founder, with his brother Charles, of the Wason Car Company, was about to go West on a business trip and he was anxious to secure the services of a bookkeeper during his absence. Mr. Ripley consented that Mr. Fisk should accept this position, and what was intended merely as a temporary engagement, resulted in permanent employment. And thus began Mr. Fisk's connection with the Wason Manufacturing Company, which has been so auspicious both for himself and the company.

It may be interesting at this point to give some idea of the growth of the Wason Manufacturing Company, from its inception to the present time. It was founded by the late Thomas W. Wason in 1845, in association with his brother Charles. In that year they began making freight cars for the Connecticut River Railroad. Their first car was built entirely by themselves, in a shed not far from the tracks of the Boston and Albany Railroad, which was so small that the car had to stand partly out of doors while building. During 1845 they built two eight-wheeled and six four-wheeled box freight cars for the Connecticut River Railroad, for which they received \$4,700. In 1846 their business increased so as to warrant their moving to a larger lot on Liberty street, and in 1848 they went to Lyman street, occupying the buildings previously used by the defunct Springfield Car and Engine Company, where they remained until the removal to the shops, under Mr. Fisk's presidency, at Brightwood.

It may also be interesting to know that Mr. Fisk, in the beginning of his association with Mr. Wason, was employed upon the basis of \$1 a day. But he was soon raised to the position of paymaster, as well as bookkeeper, and in 1854 he bought of

J. S. Mellen one-sixth interest in the company for \$3,333.33 $\frac{1}{3}$. This was the beginning of his partnership-interest in the company, which has proven to be so great and fortunate a factor in its development to its present expansion and prosperity. In the year 1851 Charles Wason had withdrawn from the company, and gone to Cleveland to engage in a similar business, and the firm became T. W. Wason & Company, in which Mr. T. W. Wason held one-half interest, and Mr. L. O. Hanson, Josiah Bumstead and J. S. Mellen one-sixth each, with a capital of \$20,000. In 1861 the business had grown to such proportions that the company bought the shops which they occupied for \$50,000, and subsequently acquired more land and buildings at a cost of \$30,000. In 1863 the company became incorporated under the name of the Wason Manufacturing Company; and in May, 1868, George C. Fisk, L. O. Hanson and Josiah Bumstead sold their interests to T. W. Wason and H. S. Hyde. In December, of the same year, there was a reorganization made, and Mr. Fisk resumed his financial interest in the company. The foundry business was then united with the car company, and the capital increased from \$50,000 to \$150,000. Under this arrangement the officers of the company were: president, Thomas W. Wason; treasurer, George C. Fisk; clerk, H. S. Hyde; superintendent, Chester Van Horne; assistant superintendent, W. H. Paige. Mr. Bumstead retired from the active business, and L. O. Hanson went to the Gilbert Bush & Company's Car Works at Troy, N. Y. In 1870 Mr. Wason died, and as the business of the company had gradually outgrown its accommodations, Mr. Fisk and Mr. Hyde purchased the land on which the company's shops now stand, about two miles from the city, in the suburbs of Springfield. He called the village, which grew up around them, Brightwood, after Dr. J. G. Holland's old home, which stands in the immediate vicinity of the shops. This fine old mansion, in which Dr. Holland wrote some of his most famous books, is familiar to hundreds of thousands of American readers of the best in American literature; and it is now occupied by Mr. Fisk himself and family, who bought this property of Dr. Holland when the latter removed from Springfield to New York, to enter upon his life-work of building up *Scribner's Magazine*.

The new shops were built and occupied in 1873, and naturally the establishment of a great industrial work like this in a suburb of the city has created a large and pleasant village, which has all the conveniences of modern life, including a railroad depot, with continual trains running in and out of Springfield, special trains running night and morning for the accommodation of the company's employees, as well as electric cars, telegraph and telephone service, city sewerage, electric light, water and gas. The works occupy sixteen and a half acres, and are erected on two lines, between which is a transfer track over a thousand feet long. The office and the paint-shop are on the south side, the latter being five hundred feet in length. On the north side are the blacksmiths' foundry and wood-work shop. The lumber yard, west of the latter buildings, covers twelve acres. These buildings are conveniently arranged, so as to enable the company to turn out its work as quickly and as economically as any similar manufacturing company in the country. Everything which goes towards the building of a car is made on the company's premises, except the wheels and car-springs.

In 1853, when the firm was T. W. Wason & Co., the business amounted to \$100,000 a year, but in the twenty years succeeding it increased to over \$1,000,000 a year. The receipts of the company since it began business, therefore, would nearly equal the entire capital of the Boston & Albany Railroad; and the importance of the industry to the prosperity of Springfield is shown by the fact that a considerable proportion of this has been paid out for labor, and has consequently contributed to the

prosperity of the different interests of that city. The company now has a capital of \$300,000, and it gives employment to from three hundred to seven hundred men, according to the amount of work on hand—the average number employed being about five hundred, while the capacity of the plant is sufficient for a thousand employees. The product of the shops is from \$400,000 to \$1,500,000, with an average of something between these extremes.

These great works have been for many years the object of Mr. Fisk's entire energy and assiduous attention to detail, and will remain a sure attestation to his business sense and ability, his shrewd prevision, and his unerring apprehension of the best and most economical means to an end.

From the beginning of his association with the company he has devoted himself tirelessly to its interests. For many years he was always the first man at the shops, and the last to leave, and he has put all his time and strength into carrying it from success to success. But of late years he has given some of the care of the details of the business into other hands, and allows himself more time for recreation, although he still keeps a close watch on the car-building industry, and on the particular interest with which his name has been so long identified. One of his principal recreations and diversions is afforded by the Fisk Casino, which he conceived and built in Brightwood as a place of entertainment for his employees. It was built entirely by Mr. Fisk, and, since 1885, has furnished a delightful and thoroughly equipped place of entertainment for amateur theatricals, which has been greatly appreciated and taken advantage of by the people of Springfield. Another of his hobbies is the rearing of famous Holstein stock.

Among his other business interests he is president of the Fisk Soap Works, the Springfield Power Company, and is the owner of a mill for the manufacture of paper at Hinsdale.

In politics Mr. Fisk is a Republican, but has generally declined to accept public offices, giving all his time and attention to the developing of the Wason Manufacturing Company's business.

ALBERT H. OVERMAN.

THERE is no product of modern invention that is making such rapid strides toward universal adoption in our day as the bicycle. The last decade of the nineteenth century will pass into history as the bicycle epoch.

The industrial, social and economical interests of the people have already been touched as with a magic wand, and quickened into new life by this speedy instrument of man's power. We have only just begun, yet we are already assured that the future of the bicycle will surpass all that the most sanguine dare to hope.

The evolution of the bicycle from the old velocipede has gone forward so rapidly that people at large have little conception of the extent of its adoption, and of the immense industry built up for its manufacture.

Until within the last three or four years the bicycle has been regarded as a luxury, an article for pastime and amusement, a machine for sporting and racing purposes; but to-day the scorchers, record-breakers, trick-riders, ten-century runners, etc., form only a small per cent. of that vast army of substantial riders who use the wheel as an instrument of utility, a time-saver, a light, speedy bearer of burdens, or a means of healthful recreation.

One of the first inventors and manufacturers of bicycles on the American conti-



A. H. Overman

ment was Albert H. Overman, the subject of this sketch, and the president of the Overman Wheel Company. From the very start Mr. Overman has been at the head and front of the movement.

The factories of the Overman Wheel Company, three in number, are located in Chicopee Falls, Mass., and form the most complete bicycle plant in the United States. The product of this company, called the Victor, is as perfect in style, material and workmanship as superior skill, large investment of capital and vast resources of machinery and labor can make it.

The company began to manufacture in 1882, and put on the market in that year a machine equal in quality to any then produced. They were the first American makers of the now universal type of Safety bicycle.

One of the most valuable features of the Victor bicycle is its interchangeable character, enabling the rider to replace any part without the intervention of a repairer at considerable expense. In its manufacture the experience of English riders and manufacturers has been consulted, the best high-grade machines of other makes have been carefully examined and tested, both as a whole and piece by piece, and no expense has been spared in efforts to make the Victor as perfect as known methods of mechanic art can produce.

The metal parts of the Victor bicycle are constructed entirely of steel, and it was the first bicycle made in which no cast metal was used. In its manufacture the problem has been solved how to secure light draft with sufficient strength. The solution of this problem has been due to a long series of experiments, which have resulted in the invention of special testing devices before unknown. With light draft in view the mechanics of the company found it necessary to test, weigh and determine with accuracy the draft of a bicycle in actual use. They wanted no guesswork, and would consider nothing short of an actual measurement of power. This could be reached only by impartial tests of mechanical appliances and mathematics. By repeated experiments along this line the Overman Wheel Company invented the Victor Dynamometer, which is a device for measuring and recording the applied power in the actual and regular use of the bicycle. By its means can be determined the amount of power requisite to drive a bicycle under all conditions and with every variety of equipment. The records of the Victor Dynamometer are taken on strips of paper at the pedals, and are used to determine every feature in the construction of the machine which bears upon draft. By the use of this invention the Overman Wheel Company have brought their bicycle to a degree of perfection which may well lay claim to the easiest-running bicycle made, since the actual records demonstrate this.

Another device invented by the Overman Wheel Company is the Victor Resiliometer. The best pneumatic tire will have the greatest resilience, or, in other words, will show the greatest elasticity when dropped from a certain height. This quality of resilience is an indispensable requisite to a good tire, and by the above-mentioned device may be accurately determined. The tires of the Victor bicycle are alone in being so tested. Actual records here, as before, have demonstrated what is justly claimed by the Overman Wheel Company, viz.: that no tire is so resilient as the Victor.

While many experts are employed in the factories of the Overman Wheel Company, the direct supervision of the whole establishment is under the immediate control of President A. H. Overman.

Besides a systematic network of agencies in the United States and foreign countries, the company has branch houses in Boston, New York, Detroit, Denver, San Francisco, Los Angeles, and Portland, Oregon.

Albert H. Overman is descended from Dutch ancestors, who came to America in the latter part of the seventeenth century. His father, Cyrus R. Overman, was a wholesale horticulturist in Bloomington, Ill., and was at one time president of the Illinois State Horticultural Society. Mr. Overman was born in Fulton county, Ill., in 1850, and was educated at the Illinois State Normal University. A student at the University during Mr. Overman's course was Miss Millie E. Benton, whom he married in 1873. While yet in his boyhood he studied plans for man-driven machinery for transportation, and invented a contrivance by which he thought it would be possible for a man to propel himself on the road. His invention, while proving impracticable, did not disprove his theory, and far from discouraged him in continuing his study of the problem he had in mind. In 1880 he began devoting himself to a development of his ideas, and in 1882 formed the company of which he is the head. Since that time he has given his whole time and attention to the affairs of the company, the success of which is due to his skill as a mechanic, his business capacity and inventive power. The establishment under his control is a monument to his faith, his energy, his scientific attainments, his faithful and honest work. Every department is complete, and with their rubber-mill, carpenter-shop, forge, automatic machinery, blacksmith-shop, and offices with their stenographers, telephone and telegraph operators, typewriters and clerks, the factories of the company present a scene to the visitor at once busy and bewildering.



JEROME WHEELOCK.

THE field of thought and action in which a great inventor lives is a peculiar one. It seems to be beyond the limits of the world's knowledge, and in the region of the unknown. He explores the mysteries which the brain of man has not yet solved, and one by one he dissipates the fog which has obscured them, and brings them into the clear light of common-place necessities of every-day life. In the progress of civilization he seems emphatically to be the instrument in the hands of Providence to meet the wants of man at the very moment they become pressing. Thus, in the truest sense, necessity is the mother of invention. The list of those who have displayed great inventive powers, and thus become public benefactors, would be strikingly incomplete without the name of Jerome Wheelock, the subject of this sketch.

The peculiar gifts of Mr. Wheelock do not seem to have been inherited. It is possible that far back in some early generation of his ancestry they may have existed, and, after a temporary obscurity, have reappeared when the necessary conditions for their use furnished opportunity for their development. Paul Wheelock, his great-grandfather, was a farmer in Millbury, Mass., and he was succeeded in the same occupation by his son Paul. Daniel Wheelock, son of the second Paul, was born in Millbury, November 7, 1799. He married, September 3, 1826, Susanna Pratt, daughter of Henry Prentice, of Wethersfield, Vt., to whom three children were born previous to the birth of Jerome: Susan L., born September 8, 1827; Daniel A., June 27, 1829; Sarah J., May 8, 1832; and Jerome, June 20, 1834. He removed from Millbury to Grafton, Mass., and followed the business of stone-cutter, building-mover and contractor in that town.

Jerome Wheelock, son of Daniel and Susanna Pratt (Prentice) Wheelock, was born in Grafton, as above stated, June 20, 1834. He attended the public schools in Grafton until he was fifteen years of age, when he left home with a determination



Jerome Wheelock

to make his own living, and for three years engaged in various occupations. At this early period, he had formed a positive and well defined taste for the study of mechanics, and at the age of eighteen he secured a position in the Taunton Locomotive Works, in Taunton, Mass. In these works he served his apprenticeship, during which the construction of the steam engine attracted his special attention, and became the subject of his thorough investigation and thought. After the completion of his apprenticeship, he was located in various places, engaged in practical work on steam engines until 1858, when he removed to Worcester and became the engineer of the Washburn Iron Works. While occupying that position, he invented the sectional ring piston packing, which he patented in 1864, and which is well known as the Wheelock Steam Cylinder Packing. The device of Mr. Wheelock brings the packing of a steam piston down to the most perfect form. It is simple, economical and durable, and adapted to all classes of engines and every variety of service. This packing was so generally accepted by steam users that arrangements were at once made for its extensive manufacture. In 1865 he left the Washburn Iron Works and formed a partnership with Charles A. Wheeler, and gave his whole time and attention to the packing business. Mr. Wheeler died in 1867, and Mr. Wheelock assumed his interest and conducted the business alone. In connection with the manufacture of packing, he was considerably engaged in the work of repairing engines, in the course of which he devised important improvements, and in 1869 built the first engine embodying them. The work of engine-building added so much to the magnitude of his industry that he secured more extensive accommodations and established the plant, which has since been used by him and his successors, the Wheelock Engine Company. In 1873 he introduced the four-valve engine and exhibited it at the American Institute Exposition in New York in 1875, at which he received the Great Gold Medal of Progress. Other improvements were constantly added, and at the United States Centennial Exposition in Philadelphia in 1876, a medal was awarded to the Wheelock Engine, and it was commended by the committee for "the simplicity of the mechanism, by means of which the variable cut-off is effected, and for general good construction." Mr. Wheelock was by no means satisfied, however, with the degree of perfection to which he had brought his engine. He invented and patented numerous other improvements, such as feed-water heaters, condensers and other parts entering into its construction, and as his business increased, he constantly enlarged his plant. In 1878 the automatic cut-off engine, exhibited by him at the Paris Exposition, attracted marked attention, and was used to operate the machinery in the United States department, and in the sections of Norway and Sweden. It finally received from the International Jury of the Exposition a Grand Prize, the only one for a steam engine, and one of eight coming to the United States. In 1880 the First International Millers' Exposition at Cincinnati offered a large award for the best steam engine, and, after a thorough and exhaustive examination, the promised award was given to the Wheelock Engine. At the Ninth Industrial Exposition, held in Cincinnati in 1881, the automatic cut-off engine of Mr. Wheelock received a gold medal and a money award. The Massachusetts Charitable Mechanics' Association also awarded to the automatic cut-off engine of Mr. Wheelock their gold medal at the Exhibition of 1881.

In 1885 Mr. Wheelock patented a new system of valves, which has been considered the most important step in the evolution of steam engines since the invention of Corliss. This system may be described as combining the valve, valve seat and operating parts within a shell or tapered plug, which is driven into a corresponding hole in the cylinder and retained in its place without bonnets or bolts. This sys-

tem, together with a novel method of driving the valve, and still other important improvements, securing economical results in the use of steam, made the Wheelock Engine practically a new and perhaps perfect machine. Patents were secured in the United States, England, France and Belgium, and arrangements were made by Mr. Wheelock during a visit abroad in 1886 and 1887, for the manufacture of his engines in the above foreign countries. They are now made under his patents in Scranton and New Castle, Pa., San Francisco, Worcester, Mass., Manchester, England, Belgium, and in Lille and Anzin, France.

In January, 1888, after his return from Europe, the business of Mr. Wheelock in Worcester was changed to the Wheelock Engine Company, an incorporated company. This step was taken by him in order that he might be relieved from its management, and be able to devote his time to the extended and widespread operations under his patents. At Expositions in London, Edinburgh and Brussels the new engine has received highest awards, and is now recognized everywhere among mechanics as standing in the highest rank among the steam-power generators of the world, and its exhibitors have received decorations from Belgium and France.

Living, as Mr. Wheelock does, in the realm of the unknown mysteries of his profession, and devoting to their solution his time and thought, he has had no time to give to public affairs. Aside from his home and his business, and his association with congenial organizations, he has had no entangling alliances to distract and scatter his thoughts. He was admitted to Franklin Lodge of Free Masons November, 1855, and has reached the thirty-second degree in that order. He is also a member of the Worcester County Mechanics' Association, the Massachusetts Charitable Mechanics' Association, the American Society of Mechanical Engineers, the American Institute of Mining Engineers, and the Iron and Steel Institute of Great Britain, to which he was admitted without solicitation.

Mr. Wheelock married, June 8, 1858, Lydia Ann, daughter of Henry and Myra Robinson, of Concord, Mass. They have had five children, two sons of whom are living. One is in the manufacturing business in the West, and the other a student in Harvard College, class of '96. Both sons inherit the mechanical gifts of their father, and will probably enter into his work and still further perfect it after his hand shall be still in death.

In appearance Mr. Wheelock is a man of mark. His intelligent expression and large development of brain would attract attention in any assembly of men. While in his presence, the question has occurred to the writer of this sketch whether, considering his limited opportunities of early instruction, a higher and broader education, such as is afforded by our schools to-day, would have magnified his inventive powers, or scattered and dulled them by opening too many avenues for activity and thought, thus checking that concentration of mind essential to the accomplishment of every great work. It should be stated, however, that Mr. Wheelock favors liberal education in no uncertain manner.

LORING COES.

JOHN COES, the grandfather of the subject of this sketch, was a stone-mason in Worcester, Mass. His son, Daniel, for many years cultivated a farm in that part of Worcester which is now known as New Worcester. In the early part of the present century, when he was tilling his acres, Worcester was only a village, and the surrounding population afforded no profitable market for the productions of



Samuel Lee

the field. The end and aim of a farmer were simply to obtain from his crops the means of living for himself and family, without even the remotest expectation of adding to any considerable extent to his store. Enough potatoes to fill his bins, enough hay and corn and oats to stock his barn, enough pork and apples and cider to fill his barrels, and enough milk and butter for daily use afforded him the means of living, while, perhaps, a small supply of each was exchanged at the country store for sugar, tea, coffee, oil and other small articles in the list of domestic necessities, or for needles and calico and cotton cloth and the scanty pin-money of the hard-working and prudent housewife.

On such a farm as this, on the 22d of April, 1812, Loring Coes, son of Daniel and Roxalana (Gates) Coes, was born. Until fourteen years of age his time in winter was spent in the district school, and in summer on the farm. Thus the education of brain and muscle went on together, and, though the former was limited, the latter laid the foundation of a vigorous life, which has served as a rich soil for the germination of the seeds of thought and culture, which were planted in the little red school-house of his boyhood days. At the age of fourteen he began to learn the trade of a carpenter with Anson Braman in Worcester, and remained with him five years. At the age of nineteen he went to Leicester, Mass., and worked at his trade with Salmon Putnam of that town. In 1833 he returned to New Worcester, and for three years was employed in the factory of Kimball & Fuller, manufacturers of woollen machinery. In 1836 he formed a partnership with his brother, Aury G. Coes, under the firm-name of L. & A. G. Coes, and, buying out the business of Kimball & Fuller, continued the manufacture of woollen machinery until 1839, when they were burned out. The destruction of their mill so far crippled them financially that they were unable to rebuild, and they removed to Springfield, Mass., where, until November, 1840, they were employed as pattern-makers in the foundry of Laurin Trask. The disaster which had befallen the brothers in Worcester, like many others in the lives of men, proved, under those providential methods which so often appear inscrutable, to be the turning-point in their careers, and the real foundation of their subsequent prosperity. While engaged in the work of pattern-making in Springfield, they had occasion to make much use of wrenches. At that time there were two styles, one an English article and the other the Merrick wrench. Both of these required both hands to operate them. Feeling the need of a wrench which could be opened and shut with one hand, they devised the style now in use, the chief characteristic of which is the substitution of a small bar in the form of a screw affixed to the side of the shaft in the place of the screw on the shaft. On their return to Worcester in 1840 steps were at once taken to secure a patent, and April 18, 1841, a patent was issued to Loring Coes, the subject of this sketch. After the issue of the patent, L. & A. G. Coes began the manufacture of the Coes Wrench in a small way in a part of the Court Mill, and their product commended itself to all mechanics who had occasion to use it. Their business was so successful that in 1843 they were able to buy the machinery which they had previously hired of Henry W. Miller, and entered on a career of almost unexampled prosperity. Beginning with the employment of three hands, their business so rapidly increased that at the end of a year they removed to the shop of Albert Curtis, in New Worcester, where they leased a basement room and had the use of a blacksmith-shop and trip-hammer, which Mr. Curtis put up for their accommodation. Until 1848 their wrenches were sold under a contract made with C. Foster & Company, but in that year a new contract for five years was made for their sale with Ruggles, Nourse & Mason. At the same time they bought the old woollen mill, in which they had both worked in their earlier years, with the water privilege, two houses and about four acres of land.

After the expiration of their contract with Ruggles, Nourse & Mason in 1853, they began to sell their own goods, which, during the twelve years of their operations up to that time, had in various ways been improved. On the 21st of July, 1853, they became associated with Levi Hardy and bought of Moses Clement his shop and machinery and also his business of making shear blades and machine knives. The partnership with Mr. Hardy in the knife manufacture continued until May 2, 1864, when they bought his interest, and, enlarging their plant, continued the business, adding at various times to their product, planing-machine knives, leather splitters, and other similar articles. The old firm, of which Aury G. Coes was a member, was dissolved April 1, 1869, Loring taking the knife factory and business, and Aury G. the wrench factory and business. After the dissolution, Loring Coes built in 1871 a large brick factory and entered into the manufacture of wrenches, with the knife shop as an additional enterprise, taking as a partner his son-in-law, M. O. Whittier, who remained with him until 1886. He then bought his partner out and has since that time conducted his knife business alone.

The two factories, the wrench factory and the knife factory, have always been managed separately and with distinct accounts. The former is now owned by the Coes Wrench Company, of which Loring Coes is president, and John H. Coes and Frederick L. Coes, sons of Aury G. Coes, are respectively treasurer and secretary. The knife factory is the property of the firm of Loring Coes & Co., of which Loring Coes is now the only member.

Mr. A. G. Coes died in 1875, and his sons conducted the business until April 1, 1888, when their interests and those of Loring Coes were united, and the Coes Wrench Company formed, as stated above. New patents have been issued for wrenches and improvements to Loring Coes at various dates, and at the present time the number of wrenches manufactured daily amounts to about fifteen hundred. The mills of the Coes Wrench Company and of Loring Coes & Co. are situated in New Worcester, on Tatnuck Brook, and employ about two hundred hands. They are operated by both water and steam-power, having an aggregate of two hundred and fifty horse-power in the three steam plants.

Mr. Coes has been a member of the Board of Aldermen and of the Common Council of Worcester, two years a representative, a director in the Worcester Electric Light Company, and nearly thirty years a director in the City Bank and its successor, the City National Bank of Worcester. He is a Republican in politics, and his religious affiliations have always been with either the Old South or the Pilgrim Congregational Church. He married, January 14, 1834, Harriet N. R., daughter of Russell Read, of Attleboro, Mass. Of his son, Frank Loring R. Coes, who died in 1872, a sketch may be found in another part of this work.

Mr. Coes, at the age of eighty-three, is still active in business, with body and mind apparently unimpaired by advancing years, and his house, with its well-selected library and its treasures of art, shows the result of an education which was only begun in the little red school-house, to which reference has been made, and which has continued through a long life of prosperous activity.



Frank S. R. Coes

FRANK LORING RUSSELL COES.

THE premature death of the subject of this sketch terminated almost at its threshold a career which had been entered upon with marked promise. The son of Loring and Harriet N. R. (Read) Coes, he was born in Worcester, Mass., June 9, 1836. Destined by his father to follow the paths of industrial life, for which a collegiate education did not seem to be a necessary preparation, after leaving the public schools, he was sent first to Leicester Academy, and afterwards to the academy in Middleboro, Mass., and in those institutions he qualified himself by special studies for the career which he was about to enter. It is a serious question whether the increasing number of young men, who seek a college life, is really promotive of the best interests of society. A good education is doubtless in the highest degree beneficial, but it is also true that education should be treated as the means and not the end, and that what is called an all-round education, such as is the result of a college life, too often opens so many avenues of thought and effort as to paralyze the natural energies and prevent that devotion to a single pursuit which is the secret and cause of every advance in moral, social, scientific or industrial civilization.

After leaving school, Mr. Coes entered the employ of his father, who was then the senior partner in the firm of L. & A. G. Coes, manufacturers of screw wrenches and knives for mowing machines, cloth shears and other kindred articles. Imbibing early a fondness for military life, at the age of nineteen he became a lieutenant in the City Guards, a volunteer militia company of Worcester. At the breaking out of the Rebellion, as a logical consequence of his zealous military spirit and his patriotic ardor, he enlisted, at the time of the call for three months' men, in the Worcester Battalion of Rifles, under the command of Major Charles Devens, who, later in the war, became colonel and major-general. The battalion was stationed at Fort McHenry, at the entrance of Baltimore harbor, and the writer of this sketch, who visited the fort in May, 1861, can testify to the commendable discipline of the battalion and the zeal of its members.

At the expiration of his three months' service, Mr. Coes re-enlisted, and for two and a half years served as corporal of Company A, in the Twenty-fifth Massachusetts regiment of Volunteers, and took part in the well-known Roanoke expedition. After his discharge, he resumed his duties in the establishment of L. & A. G. Coes, in whose employ he continued until the dissolution of the firm in 1869. After the dissolution, his father assumed the proprietorship and management of the Knife Mill, which had formed a part of the possessions of the firm, and he assumed more responsible duties in that establishment. His health, however, somewhat impaired by malaria during his services in the war, soon began to exhibit symptoms of permanent decay, and in November, 1872, at the age of thirty-six, he died. He married, in 1867, Persis J., daughter of Salmon Putnam, of Worcester, and Frank Loring Coes, his son, born August 30, 1872, married Cora M. Braman, and lives in Worcester.

EMERSON GAYLORD.

IT is, of course, somewhat difficult to compel the popular imagination, enamored, and justly so, of the records of the heroic sacrifices and bravery of armies in the field, to admit that there were equally as good patriots among those who remained at home and courageously and uncomplainingly bore the brunt of the economic and financial uncertainty and disturbance, which is the inevitable result of war. And yet the stringency and embarrassments of such times try men's mettle and courage and fidelity to high ideals as much as the field of battle itself. In fact, the strain is more protracted, for under our system of competitive society, such patriotism is never recognized in the event of failure, and its only possible hope of reward is success. This is no extravagance of language, for probably more widespread desolation and misery have been wrought by a depreciated currency, or a scarcity of currency or credit, than by the terrible occupations of conquering hosts.

One of the prominent citizens who have contributed greatly to the present unique industrial and historical greatness and importance of New England, is the Hon. Emerson Gaylord, and the most active and picturesque period of his career admirably illustrates what we have just remarked of the demands which patriotism and fidelity can make upon a man engaged in the ordinary business of civil life in a time of war. The most interesting phase of a notable career but emphasizes the integrity of purpose and steadfastness of character that dominated it from a boyhood of limited opportunities to a position of influence and respect and opulence.

Emerson Gaylord was born in South Hadley, Mass., on the 2nd of September, 1817, his father and mother being Josiah Gaylord and Lucinda (Smith) Gaylord. The Gaylord family were of French descent, three brothers, several generations back, having come from France, one settling in Connecticut, one in Massachusetts and one in the West. Emerson, with several brothers and sisters, was brought up on his father's farm until he was seventeen years of age. As soon as he was old enough he was kept occupied on his father's farm during the summer, and during three or four months of the winter he attended the district schools. At the age of seventeen he served as an apprentice to the harness-making trade with Seth Nym, of Amherst. The year following he returned to South Hadley and took up the shoemaking trade with George Kilbourne, and in a short time he had mastered the art of making a lady's gaiter boot, which was quite a business at that time. He continued at this occupation until the end of 1840, and in the beginning of 1841 entered the employ of the N. P. Ames Company, manufacturers of military accoutrements, etc., where he was set to work at artillery harnesses, saddles, etc., his previous experience in the harness-making trade serving him in good stead. The first work he did for the Ames Company was on a large contract for Texas, which kept him busy for about a year, after which he was put to work on the manufacture of military accoutrements, and sword scabbards, which were then made of leather. Having acquired a complete knowledge of the business after three or four years' service with the Ames Company, and being of an ambitious temperament, Mr. Gaylord started in business for himself. He met with some success at manufacturing various leather furnishings for the army and navy, and in 1856 received orders from the War Department for infantry accoutrements, and continued to fill large orders for them every three months up to the year 1861. Before the War of the Rebellion, Mr. Gaylord was doing an extensive business for a number of the Southern states,



Emerson Gaylord

Maryland, Virginia, Alabama, Mississippi, Georgia and Louisiana; and, indeed, at the time when war was declared, he had a lot of work on hand for the Confederate States. Some orders which he had already shipped were the means of very nearly getting him into trouble with the agents on the borders, who were in doubt about letting the goods pass. But in the midst of indecision, in a pause, as it were, the goods were allowed to proceed, as those particular states had not then seceded, although by the time they arrived at their destination they had done so. So Mr. Gaylord unwittingly supplied some of the arms which were afterwards used against the Union of States, in which the commonwealth of Massachusetts played such an important role.

But as soon as this turn in the fortunes of the North and South became known to Mr. Gaylord, he immediately refused to fill further orders, however tempting in the way of prices or otherwise. On the very day that Fort Sumter was fired upon Mr. Gaylord had on hand a large stock of accoutrements which had been prepared for shipment to the South, which, however, were finally furnished to the United States government. On the afternoon of that very day he received a telegram from Colonel Thornton, commanding at Governor's Island, N. Y., to ship to the government all goods he had on hand, as well as all those in process of construction; and a few hours later he also received a similar request from Governor Andrew, for the commonwealth of Massachusetts. Mr. Gaylord had at that time ten thousand sets, and he promptly decided to divide them equally between the government and his own state.

Just before shipping these goods he was approached by a rebel speculator from the South offering him, if he would sell his goods to the other side of the line, first \$5.50 a set—which was fifty cents a set more than Mr. Gaylord was to receive from the government—and then further offering him \$6 a set, which would mean a difference on the total number of \$10,000. But even if the bribe had been ten times as large Mr. Gaylord's attitude in the matter would have been as fixed as ever. He had given his promise to the government, and not only that, but his own personal principles were at stake, his patriotism was up in arms at such a suggestion, and he indignantly refused to consider for one moment any such offer.

This little incident simply illustrates the loyal and faithful course pursued by Mr. Gaylord in all his transactions with the government, which was not overlooked.

Although when Mr. Gaylord first started business for himself he had but a dozen or fifteen hands employed, before the war his business had increased to about two hundred employees, who filled every room in his workshops, and in order to fill his contracts he had been obliged to put on a lot of extra men and work day and night, Sundays included, for a number of weeks until the government was fully supplied. But even with this number of men at work on the orders he could not turn out enough work to meet the demands. Colonel Balch, of the Ordnance Board, at Washington, on one of his occasional visits to the shops, expressed a strong desire that they should get the goods out faster. But in order to do so it would necessitate the erection of another large building which would have to be filled with new workmen, and Mr. Gaylord explained to him that if he felt sure that he would be supplied with enough business to keep him going for a certain length of time, at least, he would risk the large outlay which would be required to extend and enlarge the business. The colonel thereupon assured him that he should have all the work he could handle as long as the war lasted. The next day Mr. Gaylord had a lot of men excavating for foundations; and in eight weeks from that time a large building, forty

feet wide by sixty-five feet long, filled with men hard at work, was an accomplished fact. Within six weeks before the closing of the war Mr. Gaylord had taken a large contract for the government for twenty thousand sets, but when the end of the war was in sight Mr. Gaylord stood ready to forfeit the same. The government, however, did not countermand the order, but gave him the privilege of completing the full twenty thousand sets, which, when finished, were stored in the arsenal, as there was no longer any need for them. Such honorable conduct in business dealings between the government and Mr. Gaylord from first to last will stand on record and be read with pride by those who read history rightly and weigh its value as well by the small details and matters of apparent minor importance as by certain auspicious days on which world-renowned movements and deeds were performed.

During the early campaigns of the war, as is well known, of course the Union forces met with many discouraging defeats, and, as everybody knows who lived through the war, it was generally thought in other parts of the world that the Confederate States would be successful in their attempt to break up the Union. Indeed, in a memorable speech, Mr. Gladstone, in the House of Commons, announced that a new nation had been added to the list of civilized nations; and the sympathy of Great Britain was from the first with the South, while, even in the North, there were many organizations of men secretly working to defeat the Union armies. This reminiscence is necessary to show the hazard which Mr. Gaylord was taking in accepting the government work, often with no assurance that it could ever be paid for in the case of failure. In such times Mr. Gaylord nobly continued shipping \$18,000 to \$20,000 worth of goods a week, when the government was financially embarrassed to such an extent that they could not send him a dollar. He himself was fully cognizant of the fact that the failure of the Union forces would mean national bankruptcy, and the depreciation not only of United States money, but of all American assets in the markets of the world. But, in the meantime, he was compelled to make a large outlay for labor, material and buildings to house his help while engaged upon large contracts, when prudence might have suggested an opposite course, in view of the terrible inability of the government to meet its obligations. Mr. Gaylord, however, like all good New Englanders, as Dr. Holmes said in one of his papers, desired nothing but "bread and the newspaper," and was content to risk everything so long as he should play his part in the great drama which was being played on American soil, to decide whether men should be chattels or freemen. So he went to Mr. Wales, the president of the First National Bank of Chicopee, whom he has since succeeded in the presidency, and laid the case before him, that he was unable to fulfill these contracts, which the government was pressing him to fill, without more capital, and, as the government could give no definite guarantee, he must get credit. Mr. Wales said, "I know, Mr. Gaylord, how you are situated. I know something about how much the government owes you, and I know it is payable to you. If the government pays you, you will pay us, I can rest assured of that; and if the government goes to pieces, you will go; and we would just as soon lose money by you as by the government. We will all go to pieces if we don't win the war." And so he found many friends to support him among the banks. But, after Congress made the greenbacks legal-tender, Mr. Gaylord paid back all his debts in ten days, and still had something left for himself.

In 1861 Mr. Gaylord contracted with the Post-Office Department for furnishing leather mail-bags with locks for four years, and he was chosen to continue supplying the same at three successive lettings—in all, twelve years.

After the war Mr. Gaylord engaged in the cabinet-hardware business, making



Emerson Gaylord

trimmings for all sorts of cabinet-goods, locks, knobs, and trimmings of various kinds. This business grew under his management and became very profitable. He utilized the same buildings to carry on this work in which he had done the government work, and even made some additions to them. In 1875, after a profitable career in this business, Mr. Gaylord sold it out. Since then he has been identified with the Chicopee First National Bank, of which he is president. His business interests are widely scattered among various manufacturing concerns, railroads, insurance, street railways, etc., and he holds stock in a number of large corporations, and is a director in many of them.



RICHARD FENNER HAWKINS.

THE sturdy old philosopher, Thomas Carlyle, was wont to declare that the man who built a stone bridge was a more practical benefactor of his race than the greatest poet or philosopher, and he used to loudly lament that he had not been called to build bridges like his grandfather. Perhaps this view was not quite a true one, for Carlyle was a bridge-builder in a different sense; he bridged over a morass of old prejudices and superstitions and outworn thoughts and traditions, and made possible for us the new world of science and toleration in which we live to-day. But a true thought was expressed in his characteristic regret, nevertheless; for the bridge-builder performs an actual tangible service that is plain to the eyes of all men, and the progress of bridge-building means increased facility and safety of travel, and that spreads education, diffuses the world's best thought, brings men into closer human touch, and, in a word, is one of the greatest means of promoting the highest civilization.

The earliest highways and railroads were not constructed very thoroughly or on very scientific principles; the main object being to open a way of communication to meet immediate needs. Any middle-aged man knows how rough and imperfect were the roadbeds of most of the railroads in the country only a few years ago, and the bridges, being usually constructed of wood in the roughest fashion, did not always afford the utmost security. In this matter of railroad traveling, England was many years ahead of the United States, with her iron ties and perfect stone-beds and iron bridges; but in the older and more settled states, such as the New England states, New York, Pennsylvania and Illinois, this is all changing, and in this magnificent work of revolution the subject of this sketch, Richard Fenner Hawkins, has borne a great and worthy part.

The family from which Richard Fenner Hawkins sprang, for several generations back, has been closely identified with the development of, and represents to a considerable extent the marvellous mechanical progress of, New England. His paternal ancestors came from England with Roger Williams, with whom they were also connected by marriage. His great-grandfather built the first factory building in Rhode Island, and his father was the first master-mechanic of the first railroad in Massachusetts. His mother was also of English descent, and to her family belonged many prominent and leading business and maritime people, who did much towards contributing to the commercial and social progress of Rhode Island, and who were generally recognized as prominent and influential citizens of that state. Richard Fenner Hawkins was therefore, by lineal descent, one might say, predestined to add to the fortunes of whatever state he settled in, and to-day he is regarded as being one of the most representative men of the times. The enormous business carried on by R. F. Hawkins' Iron Works, on Liberty street, Springfield, is the result of Mr.

Hawkins' intelligent management and business capacity and executive ability; and many notable structures throughout New England stand as monuments to his inventive mind and mechanical genius.

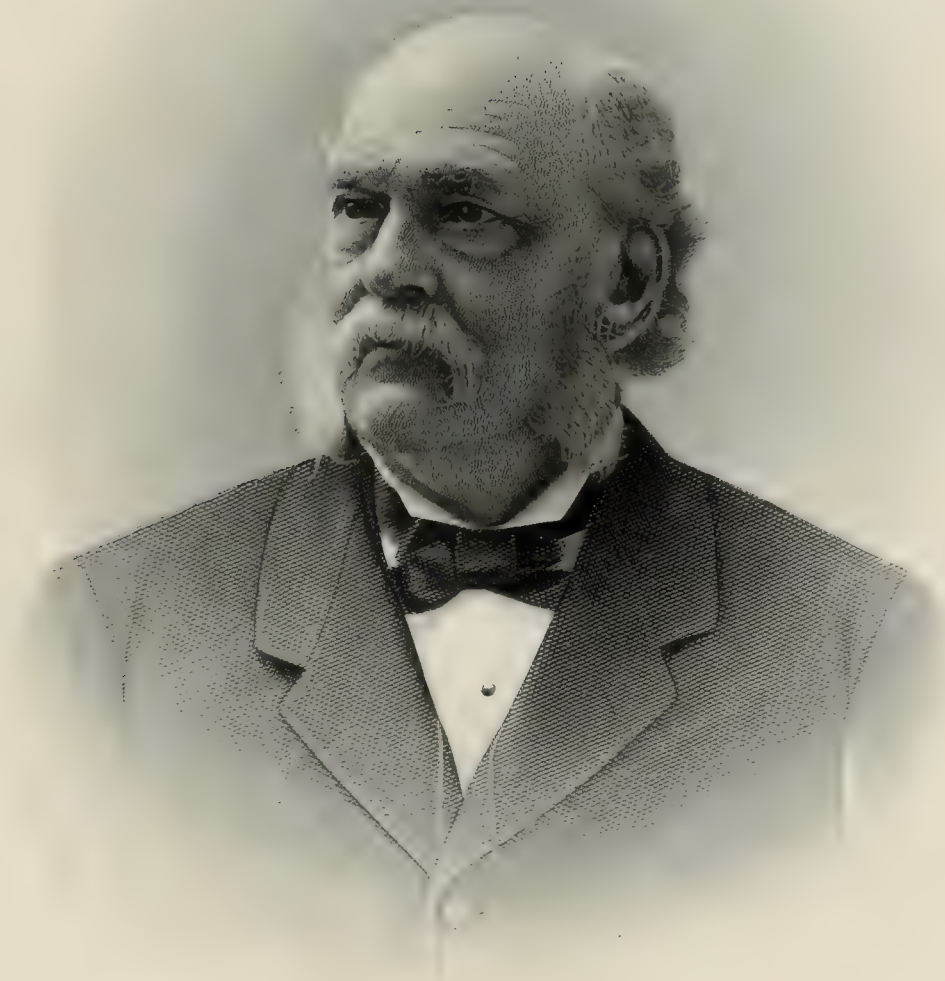
He was born in Lowell, in 1837. In 1839 his family moved to Springfield, where he was educated, and he graduated from the high school there when he was sixteen years of age. He then entered the employ of Stone & Harris, railroad and bridge builders, who were the original builders of the Howe Truss bridge, and who built many of the earlier railroads of New England. He continued with Stone & Harris as employee, first as office-boy, and, availing himself of his opportunities to exercise his natural executive talents in the business, he rapidly rose to a partnership in the firm. In 1862 Mr. Stone retired from the business, and Mr. Hawkins, in partnership with D. L. Harris, absorbed the entire business under the name of the R. F. Hawkins Iron Works, under which style it has continued ever since. In a few words, Mr. Hawkins has been connected with the works, as employee, partner, successor and proprietor for over forty years; and it is due to his tireless efforts and close attention to the details of the business that it has reached its present large proportions, doing somewhere in the vicinity of \$1,000,000 a year.

When Mr. Hawkins first became a member of the firm the principal business was building the Howe Truss bridge. Prior to this time nothing but wooden bridges had been built; but Mr. Hawkins began the experiment of building iron bridges, which were such an improvement on those of the old style that for a number of years he has constructed only those. Having great natural mechanical talent, Mr. Hawkins has done much in the way of introducing improvements in his particular field of action; and to him should be credited in great measure the development of the use of iron as a building material in New England. In addition to bridges, he has conceived and turned out a large quantity of the iron and steel material used in the construction of the railroads and locomotives of to-day. Nearly all of the earlier railroad highway bridges, engine-houses, car-houses and turn-tables in New England were built by his establishment. And in addition to the bridge-building part of the business, which is still done to a very material extent, the boiler-making and foundry business of the concern is an important element in the business of the city, and also brings in a large foreign business.

Among the structures which stand as examples of his work are the New Bedford and Springfield jails, which are largely constructed of iron, and also the Willimansett bridge, near Holyoke—a gigantic work, being eight hundred feet in length. In all matters relating to the scientific construction of iron bridges, Mr. Hawkins is looked up to as an authority by experts in the same line of work, and his opinion on all matters pertaining thereto is held in great esteem by them.

He is regarded by the citizens of Springfield as one of her most able and influential men, and they have sought to honor him time and again with political offices, and he has frequently been the choice of the party managers for mayor; but he has never been induced to accept such nomination, his time being taken up by his private and business enterprises. On several occasions, however, when he has felt it to be his duty to accept certain public offices, he consented to serve the community as alderman for three years, and also as water commissioner. He is one of the most active members of the Board of Trade, and one of its directors. He is also a member of the finance committee of the Hampden Savings Bank.

In September, 1862, he was married to Cornelia Morgan Howe, daughter of Amasa B. Howe and Sarah Cadwell Howe, of New York. Five children were born of this union—two sons and three daughters, Paul, Florence, Edith, Ethel and David.



Wm. Hoot

His eldest son, Paul, is associated with him in the iron works, acting also somewhat in the capacity of private secretary to him.

In politics Mr. Hawkins is a Republican.

HOMER FOOT.

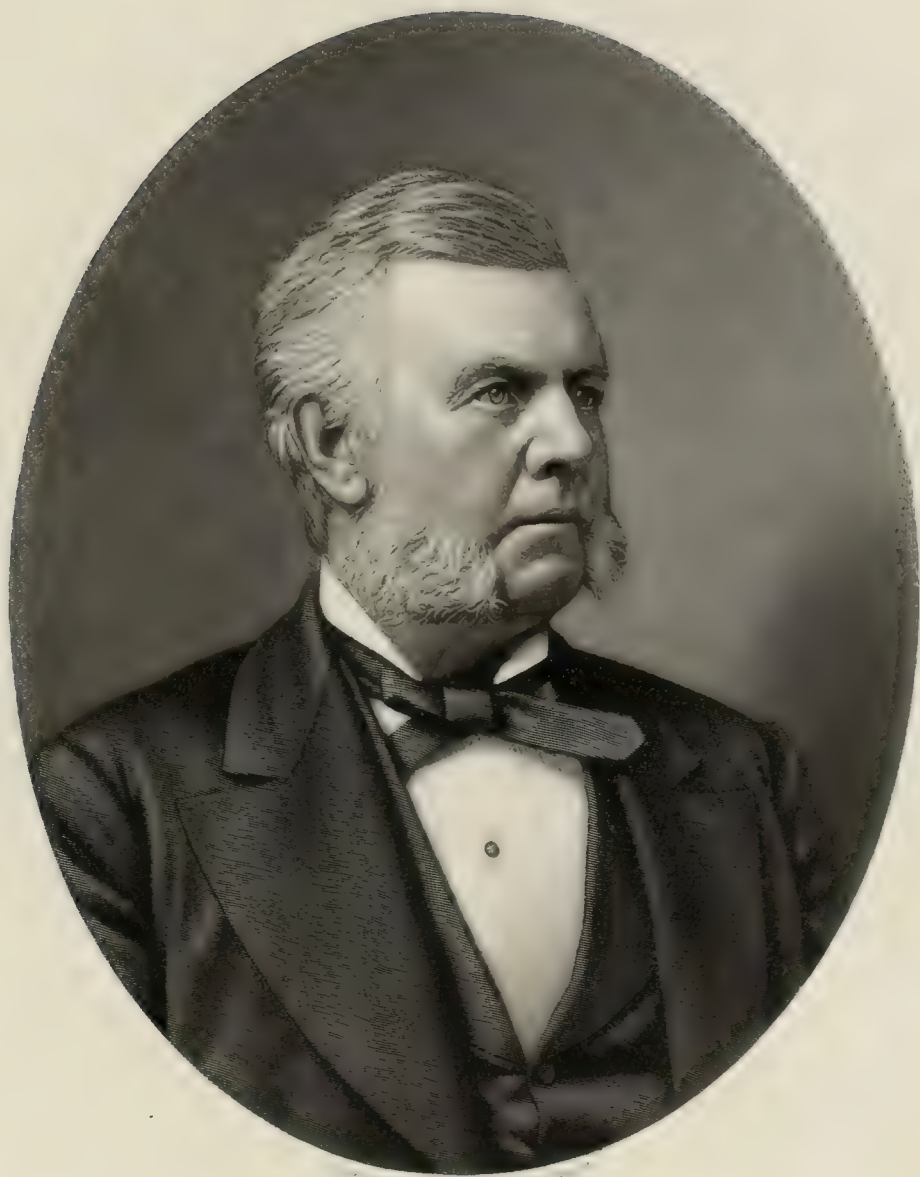
AMONG the residents of Springfield, Mass., who have witnessed the growth of a town of seven or eight thousand inhabitants, connected only by stage coach with Boston on the east, and Albany on the west, and by either coach or uncertain navigation on the shallow waters of the Connecticut river, with Hartford and the coast of Long Island Sound, to a city of fifty thousand people, receiving into its railroad station lines of rail from all New England points and New York, and enjoying a trade which with the growth of New England cannot fail to yet largely expand, no man now living and in active business is more conspicuous than Homer Foot, the subject of this sketch.

Mr. Foot is descended from Nathaniel Foote, who married in England, about 1615, Elizabeth Deming, a sister of John Deming, who came to New England and was one of the first settlers of Wethersfield, Conn. Nathaniel Foote came to New England, and died in 1644, at the age of fifty-one. His widow married, about 1646, Thomas Welles, afterwards Governor of Connecticut. In the branch of the family to which the subject of this sketch belongs, the final letter "e" has been dropped, while in other branches it has been retained. Nathaniel Foote, 2d, son of the first Nathaniel, was born in England in 1621, and died in Wethersfield, Conn., in 1655. By his wife Elizabeth he had a son, Nathaniel, born January 16, 1647. Nathaniel, the 3d, son of the above Nathaniel, born as above mentioned, married March 2, 1672, Margaret, daughter of Nathaniel Bliss, of Springfield, and granddaughter of Thomas Bliss, one of the first settlers of Hartford. He lived at various times at Hatfield and Springfield, Mass., and Stratford, Branford, and Wethersfield, Conn., at which last place he died January 12, 1703. Ephraim, son of the above Nathaniel, 3d, was born February 13, 1685, and settled in Colchester, Conn., where he married, in June, 1708, Sarah, daughter of Joseph Chamberlain, and died June 10, 1765. Adonijah, son of the above Ephraim, was born in Colchester, Conn., in 1729, and died August 19, 1795. He married, first, October 24, 1754, Grace, daughter of Joseph Day, who died March 16, 1766, and second, Abigail, widow of Jonathan Roberts, of Middletown, Conn., and daughter of Jonathan Emmons, of East Haddam, Conn. Jesse Foot, of Colchester and Stafford, Conn., son of Adonijah and Grace (Day) Foote, was born in Colchester, Conn, December 25, 1756, and died in Stafford, Conn., March 16, 1822. He married, March 12, 1778, Mary, daughter of Noah Skinner, of Colchester, and had a son, Adonijah, born October 22, 1780. Adonijah, son of Jesse, was born as above mentioned, and died in Springfield, October 13, 1825. He married, September 20, 1807, Clarissa, daughter of Jesse Woodworth, of Montville, Conn., and they had: Emerson, born February 3, 1809; Homer, the subject of this sketch; Mabel Otis and Mary Skinner (twins), born July 16, 1812; Harriet Woodworth, born July 21, 1814; Clarissa, born November 16, 1817; Adonijah, born March 22, 1819, who died in infancy; and Adonijah, again, born May 8, 1823.

Homer Foot, the subject of this sketch, was born in Springfield, Mass., July 27, 1810. He was educated at the public schools and at the Springfield academy. At the age of fourteen years and nine months he entered as a boy the store of Day, Brewer & Dwight, in Springfield, where he remained as boy and clerk six years

until, in 1831, he was twenty-one years of age. His father was master-armorer in the Springfield United States Armory, and Homer was born on the site of the armory. The store of Day, Brewer & Dwight was situated at the northeast corner of Main and State streets, and the business carried on there was that of dry-goods, groceries, hardware, iron and steel. In October, 1831, Mr. Foot bought out the business, which, since 1827, had been carried on by James Scutt Dwight, and established the firm of Homer Foot & Co., which, with a varying membership, has continued to the present time. The firm of Day, Brewer & Dwight, succeeded in 1822 the firm of J. & E. Dwight, composed of Jonathan Dwight and his son Edmund Dwight, the latter of whom became later a citizen of Boston and well known in connection with manufacturing enterprises in Chicopee and Holyoke, and with his efforts in aid of the construction of what was then known as the Western Railroad, extending from Worcester to Albany. In 1846 or 1847 Mr. Foot, who at various times in the earlier part of his business career, was associated with George Dwight and John B. Stebbins, bought of Jerry Warriner his old tavern stand on the southeast corner of Main and State streets, and built, on the site of that famous inn, Foot's Block, to which he removed his business confined to iron, steel and hardware, and which he still occupies. Since that time he has continued uninterruptedly in the business which he undertook in 1831, having a part of the time as a partner his son Homer, and now at the age of nearly eighty-five he may be seen daily at his desk exercising a general supervision of the extensive operations of the firm of Homer Foot & Co., of which his son, Francis Dwight Foot, is a member and the active manager.

Mr. Foot married May 6, 1834, Delia, sister of his first employer, James Scutt Dwight, a member of the old firm of Day, Brewer & Dwight, and his children have been Edward, born May 7, 1835; Emerson, born April 28, 1837; Homer, born December 22, 1839; Cleaveland, born January 1, 1842; Maria Shepard, born May 12, 1844; Francis Dwight, born November 19, 1845; Delia Dwight, born March 9, 1847; James Dwight, born February 14, 1850; Laura D., born September 7, 1855, and Sanford D., born January 6, 1858, all of whom but Edward, the first born, are living. No man is more deservedly respected in Springfield than Mr. Foot, and in his good sense, honest judgment, and incorruptible integrity his fellow-citizens have always confided. He has been a director of the Pynchon Bank, and its successor the Pynchon National Bank since its organization in 1853, and has been auditor of the Springfield Savings Institution fifty one years. He was also for many years treasurer of the Hampden Watch Company before its removal to Canton, Ohio. His religious associations are with the Unitarian denomination, and in the welfare and usefulness of the Unitarian Society in Springfield he has always felt a deep interest. His political associations were with the Whig party, while it survived, and have since been with the Republicans, and in recent years with the Democratic party. In 1857 he was the candidate of the Whigs and Native Americans for Lieutenant-Governor of Massachusetts, notwithstanding his declination of the nomination. Still active in body, and with a mind and memory unimpaired by those invasions of disease to which age is usually subject, his busy and useful life seems far from its end.



Geo S. Taylor

GEORGE SYLVESTER TAYLOR.

THE great and varied influence that is exerted by a man of high aims in business, and in his relations to the community in which he lives, is well exemplified in the career of George Sylvester Taylor, who is, in every respect, a typical representative of the New England character—persevering and enterprising, courageous and conservative, of scrupulous and exact habits of mind—a man of the highest intellectual and moral integrity. Such a man exercises a more widespread and vital influence in the actual life of the community in which he lives than hundreds of secluded and retired teachers of ethics in colleges and in literature; for he is an active figure in the initiation of every good movement that makes for character and righteousness in the community, and he touches men, not remotely, as mere ethical teachers do, but keenly and vitally in their every-day associations and aims. Mr. Taylor is one of those men who are not content with paying a hundred cents on the dollar and absorbing their whole energies in their business. He has always conceived that he owed another duty to society, more onerous and more exacting than any mere charity, a duty to take a vital interest and concern in everything that affects the moral and religious life of his city; and, notwithstanding his great and exhaustive business responsibilities, he has never considered any sacrifice of his time and strength too great in the cause of religion, in a day when too much indifference prevails.

George Sylvester Taylor, of the Belcher & Taylor Agricultural Tool Company, Chicopee Falls, was born in South Hadley, Mass., on March 2, 1822. He was one of a large family, seven brothers and three sisters. He is of English descent on both sides. His father was Sylvester Taylor, a butcher by trade, and his mother was a Miss Sarah Eaton, a descendant of the famous Chapin family, in whose veins ran some of the oldest and best blood in western Massachusetts. In 1828 his father brought the family to Chicopee, which was then a part of Springfield, where Mr. Taylor has resided ever since. Here he obtained a common-school education in the public schools until he was sixteen years of age, and then he took a finishing course in the Rev. Sanford Lawton's school in Springfield. At the age of nineteen, young Taylor made his first start in life for himself, and obtained a position as clerk with Colonel Bryant, who kept a country store. After an uneventful period of two years in this place, he left to accept a better opening with Mr. S. A. Shackford, who was engaged in a similar business; and in 1843 he was made a partner, and carried on the business under the name of Shackford & Taylor. After twenty successful years in this concern, in which time Mr. Taylor had made considerable money, he went into the agricultural tool business, into which he put \$10,000, and, with Mr. Belcher as his partner, established the Belcher & Taylor Company. The following year, 1864, the company was formed into a corporation under the title of the Belcher & Taylor Agricultural Tool Company, of which Mr. Taylor was made treasurer. Mr. Belcher retired from the business in 1866, and Mr. Taylor was appointed general manager as well as treasurer, which position he maintains to the present day. The present prosperous condition of the works is absolutely due to Mr. Taylor's able and judicious management. At the present time the company employs about a hundred men, and its average business is about \$140,000 a year. The company enjoys a large foreign trade through its New York and other agents.

Mr. Taylor's successful business career again exemplifies that the only road to

success is through the possession and cultivation of those sterling qualities for which the leading men of New England are noted, namely : strict integrity, concentration of purpose, assiduous attention to the details of business, and an intelligent understanding and grasping of those opportunities which dance attendance on all men, but which so frequently pass unrecognized by the majority of men who swell the lists of business failures. This latter quality is the secret of success, and is a much more essential factor in the building up of character than the believers in blind chance would have us think. To those possessing this faculty of perception, it has been proved over and over again that it is the one essential element in establishing those sturdy industries which go toward the making of a great nation.

Apart from his interesting business experiences, Mr. Taylor has been a faithful and conscientious worker for the community with which he has been so pleasantly and honorably identified for over three-score years. In 1845 he was made justice of the peace ; in 1852 he was assessor of the town of Chicopee, and he was a member of the Board of Selectmen for three years. In 1856 he was special justice of the Chicopee police court, which office he held until 1859, when he was elected member of the lower branch of the Massachusetts Legislature (Republican), representing his town. To this office he was elected for two successive years. In 1869 he was state senator and served one term. While representing his town in the Senate, he was a member of the treasury and other committees, and while in the House was a member of the committee on banking.

Notwithstanding his many business and political affiliations, Mr. Taylor has always found time to enter heart and soul into the religious spirit, and has done much to aid in the upbuilding of the religious tone of the community. He has been a deacon of the Congregational Church of Chicopee for forty-five years ; and he was superintendent of the Sunday-school of the same church from 1848 to 1873, when he resigned, after twenty-five years of faithful service. He is president of the Young Men's Christian Association there, and, in fact, in every possible way has been closely associated with the moral and religious life of the place. And not only on account of his untiring interest in all the religious work of his community is it that he wields so great a moral uplifting influence on the social atmosphere of Chicopee, but also because of his upright and honorable dealings with men generally, in every walk of life, that he has gained the respect, confidence and esteem of all who know him. In the early part of Mr. Taylor's residence in Chicopee, there were but a few small buildings in the place. Since then he has had the pleasure of seeing it grow into an important place with a large population. In 1891, when it was made a city, he was chosen mayor, being the citizens' candidate, without opposition ; and he is therefore on record as being Chicopee's first mayor. He is president of the Savings Bank, director in the Chicopee National Bank and president of the Board of Trade.

Mr. Taylor is as hale and hearty to-day as ever, and still devotes ten hours a day to his business.

In 1845 Mr. Taylor was married to Miss Asenath B. Cobb, daughter of Elias Cobb, of Princeton, Mass. They have had seven children, of whom four are now living, three sons and one daughter. The sons are all prominent business men ; the youngest, Albert E., is in the knitting industry ; Edward is a clerk for his uncle in the wholesale grocery business in Springfield, and William C. is manager of a large concern in Rolfe, Ia. His daughter is Mrs. Henry N. Lyon ; her husband, who died last October, was the superintendent of the Lamb Knitting Machine Company. Mr. Taylor has also three brothers and one sister living. One brother is in the J. Stevens Arms and Tool Company, and the other two are in the braid and wholesale grocery



A. A. Westcott

business respectively, in Springfield. The family generally is one of the most respected in Springfield and Chicopee.

Mr. Taylor is a member of the Belcher Lodge, Unity Chapter, and member of the Springfield Commandery.

ASA AUGUSTUS WESTCOTT.

CALEB WESTCOTT, the grandfather of the subject of this sketch, was born in Scituate, R. I., in 1753, and married Lydia Knowlton. His children were Oliver, born in 1782; Thomas Knowlton, born in 1787; Lydia, born in 1793; Mary, born in 1795; Nathan, born in 1797, and Caleb, born in 1800. Thomas Knowlton Westcott, the second of these children, married Lydia, daughter of Asa and Mary (Irons) Steere, and had Abby Steere, born August 24, 1818; Eliza, born July 5, 1820, who married John Wilder; Charles M., born August 7, 1822, who married Betsey Ware; Mary A., born June 22, 1824, who married Dr. Jacob B. White; Asa Augustus, born August 17, 1826, and Lydia J., born in 1828.

Asa Augustus, the youngest son of Thomas Knowlton and Lydia (Steere) Westcott, was born in Scituate, R. I., at the date above mentioned. He was educated at the public schools, and until the age of nineteen assisted his father on his farm. At that age he entered the establishment of A. Hopkins, at Pascoag, R. I., where he remained two years, learning the trade of making spindles. He then spent one year in the Franklin Foundry in Providence, and after another year at home assisting his father, he obtained employment in the spindle manufactory of Albert Harris in North Scituate, R. I. After about twelve years' service, characterized by intelligence, industry and fidelity, he became, in 1863, a member of the firm of A. Hopkins & Co., composed of A. Hopkins, Horatio Hopkins, James Potter and himself, manufacturing spindles in Pascoag. In 1870 he retired from the firm, and leasing on his own account the mill of Albert Harris, in North Scituate, he there carried on the business of making spindles until the termination of his lease in 1875. In 1872 he leased of George Draper a water privilege and building at Hopedale, which had been known as Gaskill's Mills, and until the termination of his lease of the Harris Mill, at North Scituate, manufactured spindles in both places. He afterwards purchased the Hopedale Mill and greatly enlarged it until it is the largest spindle manufactory in the country, having a capacity of three thousand spindles per day, and since 1875 has given his undivided attention to its management. In 1873 he removed to Hopedale, and since that time he has had his residence there. The proximity of the extensive works of George Draper & Sons, employed in the manufacture of cotton machinery, has furnished him with a home market for a considerable part of his product. His factory manufactures all kinds of spindles known to the trade. Among these are the ring, mule, spooler, twister, winder, Rabbeth patent, Sawyer, Sherman, Westcott improved, and all other spindles in demand from his customers.

Mr. Westcott, by his undeviating honesty, intelligent skill, untiring perseverance and modest deportment, has won a high place in the esteem of his fellow-citizens who have learned to appreciate his religious, moral and business worth. He has served with credit in various town offices and is now a member of the Board of Selectmen. He is a deacon in the Congregational Church and a director in the Young Men's Christian Association, and has been a liberal contributor to both organizations. Before the incorporation of Hopedale he was for a long time deacon in the Congrega-

tional church of Milford. He married, November 5, 1850, Elizabeth, daughter of Wilmarth N. and Maria Aldrich, of Scituate, R. I., and has had six children: Augustus W., born in Scituate August 29, 1851, who married Harriet A. Steere; Wilmarth A., born in Scituate December 18, 1852, who married Nancy A. Hopkins; Mary A., born in Scituate December 19, 1856, who married George N. Hopkins; David A., born in Scituate October 6, 1862, who married Alice E. Whitney; Maria Phillips, born in Burrellville, R. I., April 6, 1866, and Frank Thomas, born in Burrellville August 6, 1868, who married Elizabeth H. Tourtellot. Three of the sons, Augustus, Wilmarth and David, are in business with their father, and Frank T. is a civil engineer, residing at Central Falls, R. I.

ANDREW J. CLARK.

PROMINENTLY identified with the interests of Orange, and one who ranked among the most esteemed and honorable citizens of Franklin county, was the Hon. Andrew J. Clark, the subject of this sketch. The Clark family is of old and honorable English lineage. It is also of historical interest, as it traces its family to Hugh Clark, who emigrated from England to America in 1630, and settled in Watertown, Mass. Many distinguished names are found in the Clark genealogy from that time to the present, and among these in a lateral line was the Hon. Hannibal Hamlin, United States Senator from Maine, and in 1861 and 1865 Vice-President of the United States. His mother was a direct descendant of Hugh Clark. Luther Clark, grandfather of Andrew J., was a native of Hubbardston, Mass. Ira, father of Andrew J., was born in Leominster, Mass., in 1799, and died in Grafton, Mass., in 1845. In 1835 he removed to Rutland, where the subject of this sketch was born, October 9, 1835. His mother was a daughter of Nathaniel Woods, of Hardwick, Mass., who emigrated to Rochester, N. Y., in 1810, when only a few scattered habitations marked what is now one of the most flourishing cities in the Union.

Early in life, his parents being in straitened circumstances, and when he was only seven years of age, in 1842, with the heroism and courage which marked his subsequent successful business career, he boldly undertook to earn his own living, and thereby relieve his parents of his support. His parents having removed to Ware in 1841, in the following year young Clark entered the cotton mill of the Otis Company at Ware, where he remained until the mill was destroyed by fire in 1845. In the spring of that year he removed to New England Village in the town of Grafton, Mass., and entered the cotton mill of Smith & Pratt. Here he remained until 1849, when he went to Millbury, Mass., where he once more renewed his experience as a cotton-mill operative. After remaining here a few years, he went to Hubbardston, where he entered the employ of George Williams, a chair-manufacturer, remaining with him until 1853, and successively occupied positions with Weller & Company, chair-manufacturers at East Templeton, and Barker & Sawyer, chair-manufacturers at the same place. He continued with this latter institution until January, 1857, when he removed to Orange, and began the manufacture of children's carriages on his own account. One year later, in 1858, Mr. Jotham Lord joined him in this business, which was continued successfully until 1860, when Mr. Clark disposed of his interest in this establishment, and opened a store in Carpenter's block, where, until 1863, he conducted a successful trade in flour and grain. At this time, being aware of the interests of the country, and feeling that he had executive ability sufficient to



Andrew J. Clark

conduct such an enterprise, he sought a wider field for the display of his ability, and in 1863 began, in company with William P. Barker, the manufacture of sewing machines at Orange. This firm leased a small building, and began in a small way the manufacture of a low-priced single-thread hand-sewing machine, known at that time as the New England Single-Thread Machine, and from this small beginning, employing at first but two men, the sewing-machine interest has developed in Orange to the present large interests of the New Home Sewing Machine Company, which is one of the leading and representative industries of western Massachusetts. Very soon after the manufacture of the first machines, Mr. Clark was satisfied that the public demand for this article would surely increase rapidly, and, with that keen foresight which marked his whole business career, he increased the production of his factory as rapidly as possible, and in 1865, when he purchased Mr. Barker's interest, the production amounted to between three and four hundred machines per week. From 1865 to 1867 he conducted the business as sole proprietor. In the latter year the firm of Johnson, Clark & Company was organized, the new firm coming into possession of the A. F. Johnson Sewing Machine Patents. From this period, the industry was rapidly developed, large buildings erected, and the new firm began the manufacture of the Gold Medal Sewing Machine and the Home Shuttle Machine, in connection with the New England Single-Thread Machine. This firm was incorporated in 1869, as the Gold Medal Sewing Machine Company, and Mr. Clark became president of the new corporation. His great executive ability especially commended him for this position, and he held it uninterruptedly from the organization of the company until his death, October 14, 1882. Keeping abreast with the great stride which was being made in the manufacture of sewing machines throughout the country, the Gold Medal Machine was succeeded in 1870 by the manufacture of the Home Sewing Machine. This was continued until 1877, when the manufacture of the New Home Sewing Machine was begun, and the New England Single-Thread Machine discontinued. It is a noticeable fact that most of the men who exploited the sewing machine forty years ago, and who built up gigantic industries, were New England men. They introduced the manufacture of sewing machines, creating enormous wealth here and in Europe, and gained for themselves a lasting monument.

A man, who had managed his own affairs and conducted the destinies of a large corporation with such eminent success, would naturally be sought for counsel in the financial and other affairs of his community, and he filled various positions of trust and responsibility. He was chairman of the Board of Selectmen of Orange in 1865, and in 1864 and 1867 he represented the town in the General Court at Boston, and in 1870, 1871 and 1875 he represented his district in the State Senate. He was actively interested in Masonic affairs, and was a prominent and esteemed member of the fraternity. He was Master of Orange Lodge from 1863 to 1868, and from the latter year to 1871 was District Deputy Grand Master for the Eighth Masonic District.

In November, 1855, Mr. Clark united in marriage with Abbie B., daughter of Captain Cummings Lesure, of Warwick, who survives him.

Andrew J. Clark was a man of personal magnetism, genial and affable in manner, warm-hearted and generous, and was ever ready to respond to calls of distress, not only with good counsel, but with more substantial aids. All who approached him were sure of a kindly greeting, and all petitions for favors received with patient consideration and courteous reply. His mind was well disciplined and evenly balanced, his judgment was practical in the highest degree, and his great executive ability was one of his marked characteristics. Quick to grasp a point, he seldom erred in

action, and, by a faculty of reading character, he seemed always ready to meet any emergency that might arise. In early life he received a thorough business training, and in his dealings with men he was straightforward and liberal. In his enterprises he looked beyond the present, and results seldom disappointed him. In public life his administration of affairs was most satisfactory and able, and won for him the esteem of all with whom he came in contact, and he was justly regarded as one of Massachusetts' representative citizens.

JOHN WILSON WHEELER.

CLOSELY identified with the manufacturing interests of Massachusetts, and justly ranked among the leading and progressive citizens of Franklin county, is John W. Wheeler, of Orange, the subject of this sketch. His father, Wilson Wheeler, was a native of Athol, born October 5, 1804, and his mother, Catherine Holmes Warden, was born in Worcester, July 8, 1805. They were married May 26, 1820, and Mr. John W. Wheeler was born in Orange, November 20, 1832, being the second oldest of the family. His father was a substantial citizen of Orange and occupied various offices in town and county, and from the years 1852 to 1867, inclusive, was deputy sheriff for eastern Franklin county. Mr. Wheeler's early educational advantages were limited to those afforded by the common schools, open about two months each winter, and kept by men poorly paid and often poorly qualified for their work, and by a few terms at Mr. Beriah W. Fay's school, but he made good use of these and became well fitted for the large school of practical affairs in which he has taken such conspicuous rank. Much of his early life was passed as a farmer and carpenter, and though being compelled to accept these positions, neither of which was congenial to him, until a better opportunity offered, he worked uncomplainingly, but with a determination to change his vocation at the earliest practical moment. In about 1855 he entered the grocery store of Joseph Baldwin, of Fitchburg, at a salary of \$125 a year and his board. His eminent business ability, which has shown resplendent in later years, began to show itself in his new occupation, and he rapidly rose in the appreciation of his employer, and although his salary at the close of the year was voluntarily raised, he returned to his native town and entered the general store of Daniel Pomeroy. Here he remained three years, and in 1859 succeeded Mr. Pomeroy in business, which he conducted during a period of three years as sole proprietor. During this time, although his financial results had not been large, he had succeeded in establishing a reputation as a business man of ability and integrity, and through the assistance of Mr. D. E. Cheeney and R. E. Carpenter he was enabled to purchase the grocery store of Mr. A. J. Clark. These gentlemen loaned him \$2,000 on his personal security. He entered upon his new venture with that determination which has since been so clearly shown in his business enterprises, and conducted it with marked success until 1867, when he became a member of the firm of A. F. Johnson & Co., who had recently started in a small way the manufacture of sewing machines in Orange. This new enterprise on a wider plan at once afforded Mr. Wheeler full scope for his marvellous energies and clear business ability, and there was need of all his resources. His cool and careful judgment was almost a necessary adjunct at this experimental stage of the sewing-machine manufacture. The product was small, and the trouble about patents was constantly claiming the attention of the proprietors, and it required the finest skill and judgment to successfully navigate the business through this trying period. The style of the machine was several times



John W. Wheeler

T. H. HUBB & SONS

changed, and finally the firm itself was changed to a corporation in 1869, bearing the name of Gold Medal Sewing Machine Company, and Mr. Wheeler became the secretary and treasurer of the new corporation. It continued under this name and style until January, 1882, when it was again changed to the New Home Sewing Machine Company, and Mr. Wheeler became vice-president, as well as retaining his positions as secretary and treasurer, and from the beginning he has been the financial manager of the entire industry, whether firm, company or corporation. At the time he entered the firm of Johnson & Co., the business was being conducted on a small scale, employment being given to only forty men. The business has rapidly increased, until now the establishment employs about six hundred men, and the daily capacity amounts to four hundred sewing machines, and this institution is justly ranked among the leading and representative industries of western Massachusetts.

Mr. Wheeler has not only been the active head and manager of this large corporation, the duties and details of which are very exacting, but he has also found time to interest himself in every movement tending to advance the interests of Orange. He is president of the Orange Savings Bank, president of the Orange National Bank, president of the Orange Power Company, and also of the Board of Trade. He has done much also to develop the eastern part of the village, and the suburb of Wheeler is an important and growing portion of the town. He is also president of the Boston Mutual Life Association, located in Boston, a director of the Athol and Orange Street Railway, and of the Leavitt Machine Company, at Orange.

October 9, 1856, Mr. Wheeler united in marriage with Almira E. Johnson, daughter of Daniel and Almira (Porter) Johnson, of North Orange, and their family has consisted of three daughters; only one, Marion L., the oldest, survives. She is the wife of Mr. John B. Welch, and resides in Orange.

Mr. Wheeler is a social and genial man, and prominently identified with the Masonic Fraternity. He was one of the founders of Orange Lodge, and was its first secretary, and afterwards its treasurer. He is a member of Crescent Royal Arch Chapter, and was for several years its treasurer, and is also a member of Orange Commandery, Knights Templar.

Politically Mr. Wheeler is a Republican, and has ever taken an earnest and active interest in the success of his party. Although being too thoroughly engrossed in business matters to accept office, often as it has been urged upon him by his fellow-citizens, nevertheless he has held various positions, always discharging his duties with honor to himself and satisfaction to his fellow-townsmen. He was town clerk at Orange from 1861 to 1867, and in 1864 was appointed by Governor Andrew as justice of the peace. He was selectman in 1866, and in 1876 represented the First Franklin District in the Legislature, serving on the Committee on Finance, and in 1888 he was one of the delegates from the Eleventh District to the National Republican Convention at Chicago, which nominated Harrison and Morton.

Mr. Wheeler also takes a decided interest in agricultural affairs, and is the owner of a beautiful farm near Orange village, called Grand View. He is a breeder of fine horses and cattle, and a lover of good stock generally. In 1891 he was president of the Worcester Northwest Agricultural and Mechanical Society, at Athol, and in the annual report of that society a high tribute was paid to Mr. Wheeler for the enthusiasm and interest he manifested in the success of the society. Mr. Wheeler is strongly attached to his native town, and although having traveled extensively throughout our country, he always returns to Orange with increased love for the old town.

The secret of Mr. Wheeler's success is due to his tireless industry, to his prompt-

ness that never failed to meet every financial obligation however trivial or however large, to his remarkable personal attention to details and to a probity and courage tempered with caution, which have made him sagacious and successful in a remarkable degree. Cautious and shrewd, a business man of the highest integrity and signal ability, rich in experience, large-hearted, of great energy, faithful in all his relations, above fear and beyond reproach, such are the qualities which have placed Mr. Wheeler in the proud position he occupies to-day among the citizens of Franklin county.

STEPHEN WALKLEY.

STEPHEN WALKLEY, son of Stephen Walkley and Olive Newell, is descended on his father's side from Richard Walkley, who came from Midlothian, Scotland, and was made a freeman in Hartford, May 21, 1657. On his mother's side he is descended from Thomas Newell, one of the original proprietors of Farmington, who appeared in that town in 1640.

Among direct ancestors appear many of the names familiar in the colony of Connecticut, as Bates, Ford, Strong, Parsons, Upson, Wadsworth, etc. His great-great-grandfather on his mother's side was Rev. Jeremiah Curtis, the first ordained minister of the Congregational Church in Southington.

He was born at "South End," in the town of Southington, June 27, 1832. Commenced attending public school at the age of five years, attended both winters and summers until the age of nine, after which he worked on the farm summers and attended school winters until sixteen years old. He entered Lewis Academy at the age of fourteen, and when sixteen years old, commenced fitting for college. Within two years thereafter his father met financial reverses, which put a stop to his plans for a liberal education.

During the winter of 1850 and 1851 he taught school in the tenth school district of Southington. Feeling himself unfitted for that work, he entered the machine shop of S. Stow & Sons in the spring of 1851. After two or three years of special work he learned the machinist's trade, and also studied land-surveying and was appointed county surveyor. In 1854 he entered the employ of the S. Stow Manufacturing Company, successors of S. Stow & Sons, as bookkeeper and shipping-clerk, and, as the business increased, he gave his entire time to the bookkeeping for the company.

In August, 1860, he enlisted in Company A, Seventh Connecticut Volunteers. After two months of service he was detailed as clerk in the adjutant-general's department, in which capacity he continued for most of his term of service, first at the headquarters of Brigadier General H. G. Wright, and afterward of Brigadier and Major-General Alfred H. Terry. General Terry presented to him a case of drawing instruments bearing the following inscription:

"Presented to Stephen Walkley, Private, Co. A, 7th Conn. Vols., by Alfred H. Terry, Brig. Gen. Vols.; as a testimonial of respect for his character and appreciation of his faithful and valuable services."

May 16, 1855, he was married to Ellen Augusta Hobart, daughter of John Munn Hobart and Vesta Potter. They had three children, one son and two daughters. The son is secretary of the Peck, Stow & Wilcox Company. His first wife died in 1888, and, in 1891, he married Julia Way Barnes, of New York city, widow of Frank H. Barnes, formerly of Southington.



Stephen Walkley



Timothy R. Curle

In 1870 the Peck-Smith Manufacturing Company, the S. Stow Manufacturing Company, and the Roys & Wilcox Company consolidated under the name of The Peck, Stow & Wilcox Company, and Stephen Walkley was appointed secretary. After about two years, his health proving precarious, he resigned this position and purchased a local newspaper, the *Southington Reporter*. This he enlarged, doubling its subscription list, and making it a factor in shaping the public sentiment of the town in favor of good schools and public improvements. But the newspaper enterprise proved a disastrous financial venture. After various vicissitudes the name of the paper was changed to the *Southington Phoenix*, and, under other management, rose from its ashes, and has now reached a position of assured financial support.

In 1870 M. W. Beckley, the treasurer of the Peck, Stow & Wilcox Company, having died, at the urgent request of the firm, Stephen Walkley accepted a position as his successor, which he has since held. In 1885 he was appointed a director of the company, and still holds that position.

Mr. Walkley has ever manifested a deep interest in all matters tending to advance the welfare of Southington, and has been chosen by his fellow-townsmen to various positions of trust and responsibility. He has been grand juror, selectman, justice of the peace, and chairman of the board of school visitors, and member of the legislature three terms, 1875, 1887, 1888; and for more than twenty years has been deacon of the Plantsville Congregational Church, and is justly regarded as one of Southington's most esteemed and honored citizens.



TIMOTHY KEESE EARLE.

THE subject of this sketch carried in his veins the blood of the Puritans. Though in religious sentiment he affiliated with the Society of Friends, and was often an active participator in their meetings, he was as far removed in temper and spirit from the Quakers of early colonial times as the Congregationalists of to-day are removed from those who persecuted Quakers and hung witches in the latter part of the seventeenth century. To associate the Friends of recent times with those who indulged in practices offensive to our fathers, is as unjust as to associate the Christian spirit of modern civilization with the cruelties which an earlier civilization practiced and approved.

The earliest American ancestor of Timothy Keese Earle was Ralph Earle, who died in Portsmouth, R. I., in 1678. William Earle, a son of Ralph and Joan Earle, had a son, Ralph, who was born in 1660, and married Mary, daughter of Robert Carr, of Newport, R. I., and widow of John Hicks, and died in Leicester, Mass., in 1757. Robert Earle, son of Ralph and Mary (Carr) (Hicks) Earle, was born in Freetown, Mass., March 2, 1706, and married Mary Newhall. They had a son, Robert, born in Leicester, Mass., October 10, 1743, who married Sarah, daughter of Henry and Elizabeth (Rice) Hunt, and died January 23, 1819. Henry Earle, son of Robert and Sarah (Hunt) Earle, was born in Leicester, Mass., March 13, 1774, and died in that town November 8, 1837. He married Ruth Keese, widow of Timothy Earle. With his brothers, Pliny, Silas and Jonah, he was engaged in the manufacture of card-clothing, an industry which was begun in Leicester in 1785. Card-clothing is a most important factor in the manufacture of textile fabrics. Its use is to separate the fibres of the raw material, and by the reciprocal motion of two surfaces covered with sharp teeth, between which the stock is placed, to lay the fibres parallel. Card-setting, as

the process of inserting the teeth in the foundation or backing was called, was more or less done by hand until about 1828, and this was the business in which Henry Earle, the father of the subject of this sketch, was engaged in his native town of Leicester.

Timothy Keese Earle, son of Henry and Ruth (Keese) Earle, was born in Leicester, Mass., January 11, 1823, and was educated in the public schools and academy of that town and in the Friends' School in Providence, R. I. After the death of Silas Earle, who, since 1806, had been manufacturing card-clothing on his own account, his son, Timothy, sold his father's machinery to his cousin, the subject of this sketch, who continued the business a short time in Leicester. Mr. Earle was then less than twenty years of age, but his quick perception, industrious habits and ambition to succeed in life, readily fitted him for the industrial career in which he was destined to achieve success.

In December, 1843, at twenty years of age, Mr. Earle removed from Leicester to Worcester and continued the manufacture of all kinds of machine-cards in leased rooms in Washington Square in partnership with his brother Edward under the firm-name of Timothy K. Earle & Co. In 1857 they built the factory, which was occupied by the firm and their successors, the T. K. Earle Manufacturing Company, until July 1, 1890, when the business was purchased by the American Card Clothing Company. Edward Earle retired from the firm in 1869, and his place was taken by his half-brother, Thomas Earle, who remained in the firm until his death in 1871. In 1872 Edwin Brown, the son-in-law of Timothy K. Earle, entered the firm and continued a member until 1880. In that year the firm was organized as a stock company under the name of the T. K. Earle Manufacturing Company, with Mr. Earle as president and Mr. Brown as agent and treasurer. Of this company Mr. Earle built the foundations, nursed it in its infancy, reared it into a vigorous manhood, and died after it was firmly and successfully established, leaving it as a memorial of his sagacity, wisdom and skill. Mr. Earle died October 1, 1881.

Mr. Earle was a man whose integrity and blameless life was recognized and appreciated by the community in which he lived. He was a friend of every moral reform; and to the cause of temperance especially he gave his time and money. Political office and honors were not within the range of his ambition, and only when drafted into public service, against his inclinations and tastes, was he known in the political field. He was at times a member of the School Board of Worcester, and in 1880 and 1881 was the candidate of the Prohibition party for lieutenant-governor. Only to this extent did he deviate from the paths of private life, where he walked untempted by those allurements which, while promising honor and fame, so often lead business men to disappointment and financial ruin.

GEORGE OTTO SCHNELLER.

IN sketching the life of George Otto Schneller, of Ansonia, Conn., a simple list of the large number of organizations with which he was connected, and which felt his guiding hand, would be wholly inadequate to give a correct idea of the man and his methods.

For as a captain of industry he was a Napoleon, the ablest general of his state and time. The names of the institutions which felt his power may perish with the years, but his methods and genius are an inspiration forever.



George F. Dannelled

Born in Germany, in 1843, of an aristocratic family, and educated in her schools, at the age of seventeen he left home and family ; and, unaided by money or influence, started his business career in New York.

His love of home was not the less, but his love of independence was greater. Self-reliance was the key to all his actions. Loving his family with that strong passion which showed itself in his healthful dreams, and which had not faded out in the deliriums of his last sickness, he cut loose from family ties and learned the language and manners of his adopted country while engaged in occupations only sufficient to barely pay the cost of board and clothes.

“The sun set, but set not his hope :
Stars rose, his faith was earlier up.”

An elegant penman and accurate accountant, he obtained a position with O. W. Bird, of New York, who was a commission man, doing business for Osborne & Cheesman, of Ansonia, Conn., and thence drifted to Ansonia as an accountant for that firm. Rapidly rising to the largest salary obtainable in that position, he left his money well invested, and again visited his ancestral mansion with the best wishes of his employers. But, though his stay was long, he wrote that “he felt like an eagle in a hen coop,” and again came to this country. While waiting for something to turn up he made an engineer map of Ansonia and Derby, on the plan of the engineer maps of the German Empire, which is considered a model for the state.

In 1876 he purchased a spectacle factory at Shelton, Conn., and applying his inventive genius to the improvement of the mechanical processes resold it in six months to a competitor at three times its original cost.

He then turned his attention to the manufacture of eyelets. The usual proportion of eyelets had only been about one-half of the metal employed, and the processes had been slow and complicated. In three years he had invented machinery which saved more than sixty per cent. of the scrap over and above that made by the best-known process, and to enable him to surpass the cheap hand labor of Europe invented and patented a machine which turned out seventy thousand eyelets per minute. The process employed for setting eyelets was one at a time. He invented a machine for setting every eyelet in a corset at one stroke, which revolutionized the industry both in this country and in Europe.

A list of all his inventions would be out of place in this brief sketch, but they ranged from buttons to water meters and multiplex telegraphy.

In addition to his manufacturing labors, he represented his town on the Board of Education and in the State Legislature from 1891 to 1893 ; was one of the leading spirits in the Electrical Street railroad of Derby, and when the rubber companies of the United States formed a gigantic corporation was a leading director and master spirit.

When the dam, which furnished power to the extensive mills of his former employers, was carried away, he purchased and reorganized the textile branch of the business under the style of the Ansonia O. & Co., and became director and president of the Birmingham Brass Company. At the solicitation of friends he sometimes invested in outside schemes, but they never prospered as did those under his own guiding hand. His theory was that difficulties existed in all kinds of business, but were not apt to be recognized in those operations carried on at a distance.

“A score of airy miles will smooth
Rough Monadnoc to a gem.”

He believed that distant ventures were of little account, but used to say that every young man had a gold mine under his feet if he could only see it. He loved the fresh sea breeze and had his lovely summer cottage by the sea-shore. The last year of his life, 1895, he determined, in the spring, to build a new factory for his increasing business, and when completed to enjoy an ocean trip with his family to the home of his youth; but before this could be realized he felt the breath of eternal morning on his brow. He caught a severe cold, just as his factory was completed, which settled in the region of his heart and he never recovered.

In 1873 he married Clarissa Alling, of Ansonia, from which marriage six children resulted. The eldest, Marie Eloise, called by her classmates "Birdie," easily won first honors in her class, and in her memory a window has been placed in the High School Building at Ansonia. His only son, George Otto, born in 1879, who evinces much of his father's spirit, determination and business ability, will when of age succeed by the terms of the will to the care of his various enterprises.

⊙

CHARLES H. BROWN.

THE career of Mr. Brown illustrates the opportunities afforded by our institutions to young men of character and ability to achieve success in the world.

Unfortunately these opportunities are lessening in recent times, as a result of the acts of the wage-earners themselves. Under a republican form of government there should be no recognition of a distinctive labor class, and no line, however faint, should ever be drawn between labor and capital. In the natural order of the social system the mechanic and laborer should reap the benefits arising from individual effort, and find their way from the place of the earner of daily wages to that of the employer, by whom the wages are paid. But under the misguided influence of either unwise theorists or dishonest agitators, unions of various kinds are forming, or have been formed, organizing laborers as a class, the members of which find their ambition crushed, their independence crippled, and the industrious and intelligent brought down to the level of the sluggish and ignorant. No man can rise above the position of a wage-earner without the aid of his employer, and no employer will render this aid except as a reward of a devotion to his interests. Had Mr. Brown been bound in his early days by the shackles of a union, it is safe to say that he would not to-day have been a manufacturer and capitalist.

Charles H. Brown, son of Charles and Nancy (Hall) Brown, was born March 9, 1820, in that part of Mendon, Mass., which was incorporated as the town of Blackstone March 25, 1845. His father was born in Johnson, R. I., and his mother in Smithfield in that state, and when Charles H. Brown, their son, was a boy they moved to the town of Leyden, in Lewis county, N. Y. His father combined the occupations of carpenter and machinist, and, possessing limited means, was able to give his son only such an education as the common schools of Leyden could furnish.

Mr. Brown moved with his father to Smithfield, R. I., when he was fifteen years of age, and the year after he went to Greenville, R. I., and began to learn the trade of a machinist in the shop of William Poke in that town. At the end of a year Mr. Poke gave up business, and he went to Blackstone, where he worked two years in the machine shop of the Blackstone Manufacturing Company. From Blackstone he went to Newton Upper Falls, Mass., and worked three years in the machine shop of Otis Pettee. He afterwards worked one year in the Whitinsville machine shop, and



Chas. H. Brown

one year in the shop of Fowler Brothers, in Northfield, Conn., making the newly-invented solid-headed pins. Fowler Brothers moved to Waterbury, Conn., and in that town Mr. Brown continued two years longer in their service. In 1846, at the age of twenty-six years, he moved to Boston, and spent three years in the service of Otis Tufts, an eminent steam-engine builder of that period. In 1849 he removed to Fitchburg, Mass., and became established there in a permanent business and home. He entered the firm of J. & S. W. Putnam & Co., of which John and Salmon W. Putnam were the other members, buying of his partners one-third interest in the business of manufacturing and repairing machinery, which they had established in Fitchburg in 1838. The Putnam machine shop was the pioneer in that town in a business which now distinguishes it as one of the manufacturing centres of New England. Having become skilled in the work of steam-engine building while in the service of Mr. Tufts, he confined himself as a member of the firm to this line of manufacture. In 1850 he built the first steam engine produced in Fitchburg, and the designs for its construction were his own. In 1850, in conjunction with Charles Burleigh, he obtained a patent for a new engine, which was assigned to the firm of J. & S. W. Putnam & Co., and the engine made under it is known as the "Putnam Engine." In 1858 the firm was organized as the Putnam Machine Company, and Mr. Brown remained in the company until 1859, when, owing to ill-health, he sold out his interest and retired. In 1863, with health restored, he resumed business on his own account in leased premises in Newton Lane, in Fitchburg, where he continued to apply himself to the development of further improvements in the department of engine-building, to which he had already given so much of careful thought. In 1866 he was obliged to seek more commodious quarters to accommodate his increasing business, and moved to the Sawyer building, now occupied by the Fitchburg Machine Works. In 1871 he invented "The Brown Automatic Cut-off Engine," which both added largely to his reputation as a manufacturer and to the volume of his business. Still larger accommodations for his work were now required, and in 1876 he finished and occupied his present plant, covering about an acre of ground on the corner of Main and Willow streets. His sons, Charles H. and Frank E. Brown, became his associates when they became of age, and the business is now conducted under the firm-name of C. H. Brown & Co. Beginning business in Newton Lane in 1863 with one lathe in a leased shop, he now owns, in connection with his sons, a large and valuable plant employing sixty hands, and turns out a product which received a gold medal at the Paris Exhibition of 1889, and which may be found in the factories of the old as well as the new world.

Mr. Brown was a member of the common council of Fitchburg two years immediately after the incorporation of the city in 1872, and was a member of the Board of Water Commissioners fifteen years. He is also a director in the Rollstone National Bank. He married, May 24, 1847, Emeline J., daughter of Harvey and Huldah (Galpin) Hubbard, of Berlin, Conn., and has four sons: Charles H., who married Euphrasia N. Brown, of Fitchburg; Frank E., who married Almira F. Demmon; John F., who married Fanny A. Wilder, and William A. Charles H. and Frank E. are members of the firm of C. H. Brown & Co.; John F. is an attorney-at-law, and William A. is a student.

The career of Mr. Brown sufficiently indicates his character. Its success could only have been reached by a native ability, close application, industrious habits, faithful work, and strict integrity. These are the prominent traits in his character, and now, at the age of seventy-seven, he has the satisfaction of looking upon the work, into which his sons are entering, as one which he has built up on the foundation of industry, fidelity and honorable dealing.

CHAPTER XXXIII.

NEW ENGLAND GRANITES.

BY JAMES G. BATTERSON.



THE granites of New England are of various kinds and qualities, and contribute largely to the industrial prosperity along the extensive coast line which reaches from the southern boundary of Connecticut to the eastern boundary of Maine. Its superior strength, hardness and power of resistance to climatic exposure, easily place it in the front rank for the various uses of the engineer and architect.

The most expensive marbles, both foreign and domestic, which, within the experience of living men, were universally employed for monumental purposes, have perished under the rigorous severities of our destructive climate, and granite has quite as universally taken their place. The passion for monolithic work, which brought into existence such examples as the huge columns for the New York Custom House, has happily passed away. Not long hence those admirable examples of engineering skill will be broken up where they stand, as the cost of removal *en masse* would be greater than their value for any other use. The dark amphibolite from Quincy, Mass., employed in the building referred to, is unsurpassed in point of strength and durability; but its color is not suitable to a proper expression of that order of architecture, nor is the architecture well adapted to the uses of the building.

The first railroad in the United States was built by the Granite Railway Company of Quincy, for the more convenient handling of its product, and is still in use.

The Revere House in Boston, and the Astor House in New York, were both from the Quincy quarries, and admirable illustrations of the material. The Quincy quarries are practically inexhaustible, and still constitute the leading industry of the town.

As a building material the fine light-colored granite from Concord, N. H., is well illustrated by the new Library for Congress near the Capitol in Washington. The color and fineness of its texture give a delicacy of expression to every architectural line and detail, which is unequalled by any other granite structure in the world. The *Staats Zeitung* and the German Savings Bank buildings in New York are also from the Concord quarries. Cape Ann supplied the material for the Boston post-office, and is well located for cheap transportation and the handling of heavy engineering orders. The prevailing shade of green, however, is objectionable to the rendering of small details in the development of architectural designs.

Hallowell, Me., is an important point for the granite industry. From these quarries the State Capitol at Albany drew the bulk of its supplies. It is of the light-grey muscovite variety, and the Surety Company's building in New York is one of its latest and best examples.

Vinal Haven, on Fox Island, off the Maine coast, supplied largely the material for the towers and approaches of the suspension bridge for the cities of New York and Brooklyn, and was largely used in the United States war and navy building at Washington, as well as other public buildings throughout the country. Dix Island supplied the granite for the United States Treasury building at Washington, the post-office in New York city, and other public buildings, but these quarries are no longer worked. Clark's Island secured the building of the post-office at Hartford, Conn., which is its best example. Hurricane Island contributed the material for the post-office in St. Louis. The pale red granite from Jonesboro was used by the Methodist Book Concern on Fifth avenue, New York, and was cut on Fox Island.

The dark red granites from Red Beach and New Brunswick were used in the Museum of Art in Central Park, New York. General Grant's monument on the Riverside drive and the Syndicate Building at Bowling Green, N. Y., were worked from the quarries at North Jay, Me., and shipped from Portland, Me.

The granite at Mount Waldo, Frankfort, Me., has a straight rift, and, being easily split into slabs of great dimensions, has been extensively used in New York and other cities for sidewalks, vault covers, and many other useful purposes. From Milford, Mass., came the granite for the Boston Public Library, the Union Trust Company, N. Y., and other important buildings.

Extensive quarries have been developed at Barre, Vt., the stone from which has been chiefly used for cemetery work, but is available for all purposes. It is fine grain, of a light-grey color, and easily quarried in large dimensions. A red granite is found on the Connecticut coast at Stony Creek with unusually large crystals, and is well adapted for very heavy work. The granite quarries at Westerly, R. I., have easily won the first place for a material which is well adapted to work of the finest description and intricacy of detail. Fine grained, hard and tough, it responds to the labor of the carver and sculptor with results unattainable in any other available granite, and will hold an arris, sharp, firm and durable. The Statue of Alexander Hamilton in Central Park, New York, was wrought from this material, and has won unqualified praise from the best judges both at home and abroad. This material is difficult to quarry in large dimensions, and is too expensive for commercial buildings, although the office-building of the Connecticut Mutual Life Insurance Company at Hartford, and the office of the Mutual Life Insurance Company of New York at Philadelphia, were constructed from the quarries of the New England Granite Works at Westerly. The fine-polished columns in the interior of the State Capitol at Hartford were also from these quarries.

It is a true granite of the biotite variety, bluish-gray in color with a warm tint given by the brown mica. There are very few cemeteries in the country which cannot show fine examples of this most excellent material. It carried off the first prize at the Paris Exposition in 1867. The light red or pink Westerly granite has a warm, pleasing tint, and is in demand for polished columns, building and cemetery work. The waste from nearly all of the quarries mentioned has been extensively used in all of the larger cities for paving and other street work where the traffic demands the most durable material. A survey of all the quarries, large and small, is not possible within the limits fixed for this article. What then is this material which has from the earliest historic periods preserved the monumental records of mankind, and to this day is the true witness of a degree of mechanical skill which cannot be explained by any of the methods known to modern art?

THE ELEMENTS.—Granite, in the vocabulary of the geologist and chemist, is a granulated crystalline rock of plutonic origin, consisting in its principal types of

feldspar, quartz and mica. By a still closer analysis we find that the feldspar consists of silica, alumina and potash, and is called orthoclase, because of its direct or straight line of fracture. Mica is the shining or sparkling mineral in all true granites, and a chemical analysis shows it to be a silicate of aluminum, with bases of calcium, magnesium, potassium, sodium and lithium, as the particular specimen may reveal. The muscovite variety is of a silvery white color, with potash for its base, while biotite has a brownish lustre, with a base of magnesia. Mica is found more abundantly in some types than in others, giving the blocks a free rift and easy cleavage.

When found with very coarse and large crystals of feldspar like that of Stony Creek and Lyme, it takes the name of pegmatite. The large columns in the assembly room of the State Capitol at Albany are of this variety.

Syenite is a type in which hornblende takes the place of mica, and the dominant crystal is feldspar. The Egyptian obelisk in Central Park, New York, is an ancient example. The presence of quartz in combination with the feldspar and hornblende, like that of the quarries at Quincy, Mass., modifies the term, and it is called amphibolite granite.

Pliny gave the name Syenite to the Egyptian monoliths because they were quarried at Syene. Modern science, however, rejects the term as applicable to those rocks in which quartz is found as a constituent element, as it is in all the monoliths of Syene.

Quartz is a pure silex in a state of crystallization, and where it dominates the feldspar and mica, gives excessive hardness to the mass. Chalcedony, agate, carnelian, jasper, and flint are all varieties of uncrystallized silex, either transparent or opaque.

Hornblende is a mineral interlaminated with quartz, feldspar and mica; it is composed of silicate of calcium and magnesium, and some varieties have sodium, potassium and aluminum. It is also called amphibolite.

EXPOSURE.—The sulphurous gases discharged into the atmosphere from burning coals have a strong affinity for feldspar when thus exposed, and the surface is made rough and porous; for this reason the hard Swedish porphyries, which will abide the vicissitudes of any climate where the atmosphere is pure, will not stand exposure in cities where mineral coals are impregnated with sulphur, and charge the atmosphere with an acidulous gas. The true granites do not seem to be affected at all under like exposures.

WORKMANSHIP.—Polishing adds materially to the beauty, as well as the durability, of all the varieties which are sufficiently hard and compact to receive it. Nearly all of the New England granites take a fine polish and they are largely employed for decorative work and architectural effects. The mechanic who set up the first lathe in Hartford, Conn., and polished the first piece of native granite in the United States, is the writer of this chapter. The columns in the Assembly Chamber of the State Capitol at Albany were polished in Hartford. The art of polishing granite has since that time become an important industry; but the New York Capitol building is still in process of construction, and the granite for its completion is now being supplied from the quarries at Concord, N. H. The various styles of architecture in that notable building have given employment to all kinds of materials, and exhibit a high degree of workmanship regardless of expense. It is the most costly cenotaph in the world of all periods and styles ancient and modern.

No great improvement over the earliest known methods of dressing granite has yet been discovered, except in circular work, which can be done with the lathe and

revolving cutters. The column shafts and bases, as well as the balusters of the Congressional Library building at Washington, are all good examples of work done with the lathe. The saving in cost, however, is not so important as the increased accuracy of the work.

WAGES.—Good quarrymen command about \$2 per day in wages, while cutters receive about \$3, according to skill and merit. Carvers and sculptors can earn from \$4 to \$4.50 per day according to ability.

The annual output of the granite industry in New England is not so tabulated as to be available for the purposes of this paper, but it is quite large, and would have been much larger but for prolonged and persistent "strikes," which at one time diverted the demand for granite into other channels, and provoked the use of other materials by proprietors and builders.

HIGH STRUCTURES.—The rage for high buildings, which are already up to the twenty-fifth story, necessarily calls for the strongest and most perfect material in order to avoid an excessive thickness of wall in the lower stories and provide a factor of safety sufficient to withstand the wind pressure, and the super-incumbent weight. The æsthetic questions which are challenged by these towering structures are left for other critics; but if Broadway is destined to become the grand cañon of the Atlantic coast, then there must be no trifling with the strength and durability of the materials used in construction.

An equal distribution of pressure over the various points of support is unattainable, but the largest factor of safety is required where the shifting and accumulating loads of so many floors are an unknown quantity. The wind pressure per square foot of a gale at any given velocity per hour is easily computed; but the effect of a tornado upon the foot of a lever three hundred feet high, by its sudden impact at the highest point is likely to develop a crushing force where the utmost power of resistance is none too great. Certain it is that the integrity of sound granite would be preserved under conditions where other building materials would fail.

MONOLITHS.—There are quite a number of quarries in New England from which obelisks or columns can be quarried, as large or larger than any which have been taken from the quarries at Syene. It is only a matter of time and money. The famous seven months' exploit of Queen Hatasou in erecting the great obelisk at Karnak undoubtedly refers to the time required for its emplacement at the temple, and not to the time occupied in quarrying and cutting.

ANCIENT MASONRY.—The King's Chamber, in the great pyramid of Cheops, however, gives us an example of granite masonry which has for all subsequent ages excited the wonder and admiration of the world. Huge monoliths, each having a weight of one hundred or more tons, were cut and laid one upon the other without cement or mortar, and yet the bed and build are so exactly coincident that in some cases the joint has to be carefully sought for to be found. The cutting of two surfaces in any material thirty feet long and six to eight feet in width, so that they will coincide at all points with such marvellous accuracy, is much more astonishing to the skilled mechanic and engineer than the task of transporting and handling such immense weights. It may be doubted if any mechanic at the present day can work two surfaces thirty feet in length so that when brought together they will be found perfectly coincident, without retouching or fitting. The ancient Egyptians must have had some method for moving these prodigious blocks one upon the other with a cutting material like emery and water between, until they were rubbed to fit like the joints of a Florentine mosaic.

The writer was in Egypt with Brunel, the great English engineer, who, after a careful inspection, declared his inability to discover "*how they did it.*"

STATUARY.—The colossal statue of the American Soldier, on the battlefield of Antietam, is twenty-two feet high, cut in Westerly granite, but is in two pieces, the joint being on a line with the belt.

The five statues which decorate the Pilgrim monument at Plymouth, Mass., were cut from Hallowell granite, and are considered as something extraordinary in point of size, but the Egyptians thought it nothing worthy of record until their colossi attained a weight of eight or nine hundred tons in a single piece. The obelisk in Central Park, New York, has a weight of only two hundred and twenty-four tons, one-quarter the bulk of the Theban statue to Sesostris the Great (Rameses II.).

When one looks upon the constructive art of the Egyptians, which the blind fury of Cambyses could not wholly destroy, and then upon the dizzy heights to which the veneered webs of iron and steel are spun at the present time for office buildings, he wonders at the benign Goodness which tempers the winds with mercy and filaments of steel with strength.

RESISTANCE TO FIRE.—As a defense against fire we must frankly admit that granite does not possess advantages largely superior to other materials. The sudden expansion and contraction caused by great heat and cold water is destructive. The only way to preserve building materials from the destroying agency of fire is to prevent the fire.

IMPROVED METHODS.—The evidence is accumulating that human ingenuity will ere long devise a tool for dressing granite which will supersede the hand tools now in use, and materially reduce the cost. The pneumatic tool of Wolstencroft's Sons in Philadelphia is the most simple and effective machine tool now in use, and improvements may be expected.

Macdonald's cutter for platforms and large surfaces is so far the best, but is profitable only on that one class of work, and then only when constantly employed.

The planing machines, which work well on the softer materials, are useless on the more refractory granites.

The New England granites are so abundant and easily quarried that we have only to reduce the cost of cutting to bring their employment into more general use.

STRENGTH.—A cubic foot of sound granite having a weight of one hundred and sixty-five pounds, will stand without crushing under a uniform pressure of fourteen hundred and forty tons. A granite wall three hundred feet high would have a direct pressure at the base of only twenty-five tons per square foot. For large-spanned arches and the supporting piers of heavily-loaded buildings granite has no rival for strength and durability.

COLOR.—The color can only be determined by breaking the rock below its weathered surface, and then by wetting or polishing the fragment. Comparing the newly-broken fragment with the old weathering indicates in a practical way, not only the permanence of color, but the presence or absence of decomposing substances in the rock.

A very white rock suggests the absence of all metallic oxides, and the presence of that variety of mica known as muscovite. Black, when unchanged by weathering, indicates the presence of silicates like hornblende or augite with an oxide of magnetite. A dull yellow is due to hydrated peroxide of iron, and a bright yellow to iron sulphides. A deep red indicates granular peroxide of iron, which is liable to fade into a pale or light red tint. Green is due to hydrous magnesian silicates. The carbonate of copper yields an emerald green, pale or brilliant in spots, but is not common.

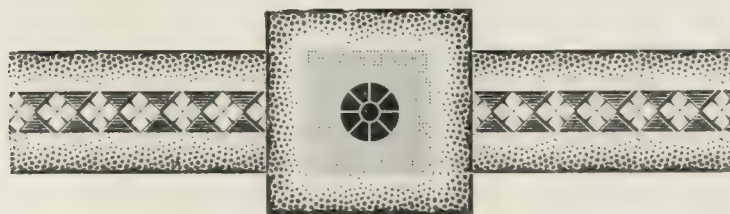
The presence of iron in these combinations merely as a matter of color is not objectionable, but uncombined oxides which on exposure change the color to a dull rusty appearance, condemn the rock to a low grade of work.

Granite, like all other rock formations, whether primary or secondary, should be laid in the wall upon its natural bed; otherwise the extreme pressure is directly in the line of its natural cleavage, and the power of resistance to great pressure is reduced. This, of course, is impossible as to shafts of columns, pilasters and obelisks, and is one of the various reasons for the scaling and disintegration of the Egyptian obelisk in New York, where the line of cleavage is vertical and affords small resistance to the action of moisture and the extremes of heat and cold.

This monument is a noble tribute to the skill of the engineer, and the generosity of its wealthy donor; but it is a strange anachronism in the world's history, and the granite tears it sheds are painful witnesses that it cannot sing the songs of Egypt in a strange land.

The memorials of Thotmes III., which were erected about three hundred years before Moses fled from the taskmasters of Pharaoh, are now in London and New York, telling no story which belongs to the history of the people who inhabit either city. At Constantinople the Turk has decorated the Egyptian monolith with the crescent. At Rome Pope Sixtus V. crowned the pyramidon of the Vatican obelisk with the Latin cross, and carved upon its pedestal the apostrophe "*Ecce Crux Domini.*"

If we will imitate the piety of the ancient Egyptians who raised these splendid monuments to their gods and kings, let us use the granites of New England, and inscribe them with the records of our own achievements, which the people as well as the priests can read, and thus mark the period and the genius of the people who erect them.



CHAPTER XXXIV.

CONSTITUTIONAL HISTORY OF CONNECTICUT.

BY HENRY C. ROBINSON.



LEADING writer, Mr. Cooley, defines a constitution as "That body of rules and maxims in accordance with which the powers of sovereignty are habitually exercised." The modern habit is to reduce the rules and maxims to writing. Like unwritten organic principles, political literature requires judicial construction. The border-land between constitutional and statutory legislation is not easy to define, and, as a constitution is more dignified and less susceptible to change than statutes, the temptation to incorporate enactments, which are properly statutory, into the organic law, is often too strong to be resisted, and the legislative hobby of the day creeps into the constitution in the wash of an ephemeral enthusiasm.

For the principles which are properly called constitutional the American colonies owe much to the civil law, to the traditions of the Low Countries, and, most of all, to the common law of England and the body of British liberties. Connecticut differs radically from her sister colonies, and from all of them in her earlier and earliest assertions of the right of self-government. The Connecticut colonists succeeded to the common law and British liberties purely as an inheritance, and not at all as a duty of allegiance. Connecticut and Rhode Island were freer from domination than the other colonies. They never lost nor surrendered their charters. Their colonial laws were not repealable by the Crown. Rhode Island occasionally referred her legislation to the laws of England, while Connecticut referred hers only to the "Word of God." Robert Quay commented on the peculiarities of the Connecticut colonists in the Book of Laws, as follows:

"The people are of a turbulent, fractious, and uneasy temper. I cannot give their character better than by telling your Lordships that they have made a body of laws for their government, which are printed; the first of which is that no law is in force of their government till made so by act of their own. Having told your Lordships this, I think there is no further room to admire at any extravagancy acted in the government."

Only ten of the acts which were printed in 1750 were purely English. Gershom Bulkeley, in "Will and Doom," complains that "by this law all the law of England—common, or statute, or other—is exploded at once."

For more than sixty years primogeniture, which was a radical principle in English descent, was nullified in Connecticut by custom. And the common law of descent was never recognized in Connecticut, and simply because the colonists disapproved of it, and so rejected it of their free will. In October, 1639, the Gen-

eral Court enacted that intestate estates should be divided by the particular courts between the wife, children and kindred "as in equity they shall see meet." In Ludlow's code, Rev. 1673, the estate was to be divided "according to law, and for want of law according to rules of righteousness and equity." It is to be noticed that "law" meant law according to Connecticut, and not English, construction, as the English law was never recognized. In 1699 the statute of distributions was passed, giving to children equal shares, excepting that a double portion was allotted to the eldest son. When the king and council declared the statute of 1699, relative to descent, null and void, in the well-known case of *Winthrop v. Lechmere*, 1727-28, the colony disregarded the judgment. Later, in 1745, the statute of 1699 was sustained in England as within the Connecticut charter, in the case of *Clark v. Towsey*, 9 Col. Rec. 587.

Contrary to the law of England, bastards have always been allowed by the law of Connecticut to inherit from their mother.

In speaking of customs, duties and the "roguery" of the people, Quay writes, "I have no hope of preventing illegal trade in that government while it is in the hands of those people."

In short it may be said, and this position is not only historically accurate, but is sustained by decisions of the highest tribunals of the state, and notably in the scholarly opinion of Judge Baldwin in *Campbell's Appeal*, 64th Conn. 277, that the fathers adopted so much of the common law as was operative as law in the fatherland when our ancestors left it, and which in the judgment of the fathers themselves was well adapted to the new state of things. This also may be said of later English legislation, including the Bill of Rights itself.

It is familiar to all students of history that dependence upon England and allegiance to her laws was an essential element in the charters and provincial governments of the colonies. Maryland asserts with pride that she was the "first colony which was erected into a province of the English empire, and governed regularly by laws enacted in the provincial legislature." The boast is well founded, but the charter under which her legislature was convened was purely provincial and proprietary, and its obligations to the Crown were intense. The "Mayflower" compact, whose eulogy is universal, acknowledged allegiance to the Crown, and by its terms said that the contract was written for the "honor of our king."

Unlike all the other colonists, and greatly in advance of them, the Connecticut founders disclosed to history a new vision of democracy. Originally of the Massachusetts colony, they were democrats of democrats. By the shores of Massachusetts Bay, they took in new and larger thoughts of self-government. While they were intense and devoted worshipers of Almighty God, sincere and enthusiastic Christians, and believers, with some discriminations, in the legislation of the Jewish theocracy, they passed beyond the narrow limits of citizenship which had been established in the Massachusetts Bay, and which were asserted later in New Haven, and which shut out from electoral privileges all but church members. They had opened their eyes to the fact that a living church could be formed wherever two or three were gathered in the name of the Master, without royal or prelatical commission. The next step was a natural one, and that was the step to self-government by a free community. In taking that step, they found light which had not illumined their neighbors, and which enlarged the body of sovereigns in the state to include all freemen, whether they were sovereigns in the local church or not. Living for a short time in an undefined way and theoretically in the patronage of the Massachusetts colony, under the guidance of those strong thinkers, Thomas Hooker and

Roger Ludlow, they were prepared to take the step which gave to the world the first instance of a written constitution adopted by the suffrages of the people and recognizing no allegiance to king, prelate, or other earthly power.

This brings us to the Fundamental Orders of 1639. The text of this organic law should be carved in sienite, not only on the capitol grounds of Connecticut, but in the capitol of the United States, and should be written in the archives of all governments which are based upon popular will, and which act through representatives of a sovereign people. It is as follows:—

THE CONSTITUTION OF 1639.

(Abbreviations are modernized.)

Forasmuch as it hath pleased the Allmighty God by the wise disposition of his diuyné providence so to Order and dispose of things that we the Inhabitants and Residents of Windsor, Harteford and Wethersfield are now cohabiting and dwelling in and vppon the River of Conectecotte and the Lands thereunto adioyneing; And well knowing where a people are gathered together the word of God requires that to mayntayne the peace and vnion of a such people there should be an orderly and decent Gouverment established according to God, to order and dispose of the affayres of the people at all seasons as occation shall require; doe therefore associate and conioyne our selues to be as one Publike State or Commonwelth; and doe, for our selues and our Successors and such as shall be adioyned to vs att any tyme hereafter, enter into Combination and Confederation together, to mayntayne and presearue the liberty and purity of the gospell of our Lord Jesus which we now professe, as also the disciplyne of the Churches, which according to the truth of the said gospell is now practised amongst vs; As also in our Ciuell Affaires to be guided and gouerned according to such Laws, Rules, Orders and decrees as shall be made, ordered & decreed, as followeth:

1. It is ordered, sentenced and decreed, that there shall be yerely two generall Assemblies or Courts, the first on the second thursday in Aprill, the other the second thursday in September, following: the first shall be called the Courte of Election, wherein shall be yerely Chosen from tyme to tyme soe many Magistrats and other publike Officers as shall be found requisitte; Whereof one to be chosen Gouvernour for the yeare ensueing and vntill another be chosen, and noe other Magistrate to be chosen for more than one yeare; provided alwayes there be sixe chosen besides the Gouvernour; which being chosen and sworn according to an Oath recorded for that purpose shall haue power to administer justice according to the Lawes here established, and for want thereof according to the rule of the word of God; which choise shall be made by all that are admitted freemen and haue taken the Oath of Fidellity, and doe cohabitte within this Jurisdiction (hauing beene admitted Inhabitants by the major part of the Towne wherein they liue) or the mayor parte of such as shall be then present.

2. It is Ordered, sentenced and decreed, that the Election of the aforesaid Magistrats shall be on this manner: euery person present and quallified for choyse shall bring in (to the persons deputed to receaue them) one single paper with the name of him written in yt whom he desires to haue Gouvernour, and he that hath the greatest number of papers shall be Gouvernour for that yeare. And the rest of the Magistrats or publike Officers to be chosen in this manner: The Secretary for the tyme being shall first read the names of all that are to be put to choise and then shall seuerally nominate them distinctly, and euery one that would haue the person nominated to be chosen shall bring in one single paper written vppon, and he that would not haue him chosen shall bring in a blanke; and euery one that hath more written papers than blanks shall be a Magistrate for that yeare; which papers shall be receaued and told by one or more that shall be then chosen by the court and sworne to be faythfull therein; but in case there should not be sixe chosen as aforesaid, besides the Gouvernour, out of those which are nominated, then he or they which haue the most written papers shall be a Magistrate or Magistrats for the ensuing yeare, to make vp the foresaid number.

3. It is Ordered, sentenced and decreed, that the Secretary shall not nominate any person,

nor shall any person be chosen newly into the Magistracy which was not propounded in some Generall Courte before, to be nominated the next Election; and to that end yt shall be lawfull for ech of the Townes aforesaid by their deputyes to nominate any two whom they conceaue fitte to be putte to Election; and the Courte may ad so many more as they iudge requissitt.

4. It is Ordered, sentenced and decreed that noe person be chosen Gouvernor aboue once in two yeares, and that the Gouvernor be alwayes a member of some approved congregation, and formerly of the Magistracy within this Jurisdiction; and all the Magistrats Freemen of this Commonwelth; and that no Magistrate or other publike officer shall execute any parte of his or their Office before they are seuerally sworne, which shall be done in the face of the Courte if they be present, and in case of absence by some deputed for that purpose.

5. It is Ordered, sentenced and decreed, that to the aforesaid Courte of Election the seuerall Townes shall send their deputyes, and when the Elections are ended they may proceed in any publike searvice as at other Courts. Also the other Generall Courte in September shall be for making of lawes, and any other publike occation which concerns the good of the Commonwelth.

6. It is Ordered, sentenced and decreed, that the Gouvernor shall, either by himselfe or by the secretary, send out summons to the Constables of euery Towne for the cauleing of these two standing Courts, one month at lest before their seuerall tymes; And also if the Gouvernor and the gretest parte of the Magistrats see cause vppon any spetiall occation to call a generall Courte, they may giue order to the secretary soe to doe within fowerteene dayes warneing; and if vrgent necessity so require, vppon a shorter notice, giueing sufficient grownds for yt to the deputyes when they meete, or els be questioned for the same; And if the Gouvernor and Mayor parte of Magistrats shall ether neglect or refuse to call the two Generall standing Courts or ether of them, as also at other tymes when the occations of the Commonwelth require, the Freemen thereof, or the Mayor parte of them, shall petition to them soe to doe; if then yt be ether denyed or neglected the said Freemen or the Mayor parte of them shall haue power to giue order to the Constables of the seuerall Townes to doe the same, and so may meete together, and chuse to themselues a Moderator, and may proceed to do any Acte of power, which any other Generall Courte may.

7. It is Ordered, sentenced and decreed that after there are warrants giuen out for any of the said Generall Courts, the Constable or Constables of ech Towne shall forthwith give notice distinctly to the inhabitants of the same, in some Publike Assembly or by goeing or sending from howse to howse, that at a place and tyme by him or them lymited and sett, they meet and assemble themselues together to elect and chuse certen deputyes to be att the Generall Courte then following to agitate the afayres of the commonwelth; which said Deputyes shall be chosen by all that are admitted Inhabitants in the seuerall Townes and haue taken the oath of fidellity; provided that non be chosen a Deputy for any Generall Courte which is not a Freeman of this Commonwelth.

The aforesaid deputyes shall be chosen in manner following: euery person that is present and quallified as before expressed, shall bring the names of such, written in seuerall papers, as they desire to haue chosen for that Imployment, and these 3 or 4, more or lesse, being the number agreed on to be chosen for that tyme, that haue greatest number of papers written for them shall be deputyes for that Courte; whose names shall be endorsed on the backe side of the warrant and returned into the Courte, with the Constable or Constables hand vnto the same.

8. It is Ordered, sentenced and decreed, that Wyndsor, Hartford and Wethersfield shall haue power, ech Towne, to send fower of their freemen as their deputyes to euery Generall Courte; and whatsoeuer other Townes shall be hereafter added to this Jurisdiction, they shall send so many deputyes as the Courte shall judge meete, a reasonable proportion to the number of freemen that are in the said Townes being to be attended therein; which deputyes shall haue the power of the whole Towne to giue their voats and allowance to all such lawes and orders as may be for the publike good, and unto which the said Townes are to be bownd.

9. It is Ordered and decreed, that the deputyes thus chosen shall haue power and liberty to appoynt a tyme and a place of meeting together before any Generall Courte to aduise and consult of all such things as may concerne the good of the publike, as also to examine their owne

Elections, whether according to the order, and if they or the gretest parte of them find any such election to be illegall they may seclud such for present from their meeting, and returne the same and their resons to the Courte; and if yt proue true, the Courte may fyne the party or partyes so intruding and the Towne, if they see cause, and giue out a warrant to goe to a newe election in a legall way, either in parte or in whole. Also the said deputyes shall haue power to fyne any that shall be disorderly at their meetings, or for not comming in due tyme or place according to appoyntment; and they may returne the said fynes into the Courte if yt be refused to be paid, and the Tresurer to take notice of yt, and to estreete or levy the same as he does other fynes.

10. It is Ordered, sentenced and decreed, that euey Generall Courte, except such as through neglect of the Gouvernor and the greatest parte of Magestrats the Freemen themselves doe call, shall consist of the Gouvernor, or some one chosen to moderate the Courte, and 4 other Magestrats at lest, with the mayor parte of the deputyes of the seuerall Townes legally chosen; and in case the Freemen or mayor parte of them, through neglect or refusall of the Gouvernor and mayor parte of the magestrats, shall call a Courte, yt shall consist of the mayor parte of Freemen that are present or their deputyes, with a Moderator chosen by them: In which said Generall Courts shall consist the supreme power of the Commonwelth, and they only shall haue power to make lawes or repeale them, to graunt leuyes, to admitt of Freemen, dispose of lands vndisposed of, to seuerall Townes or persons, and also shall haue power to call ether Courte or Magestrate or any other person whatsoeuer into question for any misdemeanour, and may for just causes displace or deale otherwise according to the nature of the offence; and also may deale in any other matter that concerns the good of this commonwelth, excepte election of Magestrats, which shall be done by the whole boddy of Freemen.

In which Courte the Gouvernour or Moderator shall haue power to order the Courte to giue liberty of spech, and silence vnceasonable and disorderly speakeings, to put all things to voate, and in case the voate be equall to haue the casting voice. But none of these Courts shall be adiorned or dissolued without the consent of the maior parte of the Courte.

11. It is ordered, sentenced and decreed, that when any Generall Courte vppon the occations of the Commonwelth haue agreed vppon any summe or summes of mony to be leuyed vppon the seuerall Townes within this Jurisdiction, that a Committee be chosen to sett out and appoynt what shall be the proportion of euey Towne to pay of the said leuy, provided the Committees be made vp of an equal number out of each Towne.

14th January, 1638, the 11 Orders abouesaid are voted. (The date is 1638 O. S. and 1639 by our modern chronology, which was adopted in 1752.)

In this instrument, quaint in phrase but strangely comprehensive in thought, reverent to God but aggressive and bold to all human beings of rank and authority, we have the first written constitution in history adopted by a free people, which asked consent from no king and recognized no earthly allegiance but to the sovereign commonwealth. No lover of democracy, no believer in the right of self-government by a people, can read it without a sense of worship, nor recall its authors but with reverence. It was made by a few planters, probably less than two hundred, not enough in all to fill to-day the houses of any one of the wards of the beautiful city where they met. Its composition is credited to Roger Ludlow, a lawyer of scholarship and a democrat to the tips of his fingers, of whom Roger Wolcott writes in his *Memoirs*, Conn. Hist. Coll. 111, 327: "He was a man inferior to none for good sense and skill in the law." A greater man than Ludlow, Thomas Hooker, prophet, statesman and divine, who argued in Massachusetts for popular rights with the elder Winthrop and against ecclesiastical bigotry with Cotton, bore a larger part in its creation than Ludlow himself. Seven months before the adoption of the Constitution of 1639, he had delivered to his people a sermon, which embodied in forcible phrase the elemental principles of democracy in doctrine, strange enough then, but familiar to all to-day. We quote:—

“Deut. i. 13.—Take you wise men, and understanding, and known among your tribes, and I will make them rulers over you. Captains over thousands, and captains over hundreds, over fifties, over tens, etc.

Doctrine I. That the choice of public magistrates belongs unto the people, by God's own allowance.

II. The privilege of election, which belongs to the people, therefore must not be exercised according to their humours, but according to the blessed will and law of God.

III. They who have power to appoint officers and magistrates, it is in their power, also, to set the bounds and limitations of the power and place unto which they call them.

Reasons: 1. Because the foundation of authority is laid, firstly, in the free consent of the people.

2. Because, by a free choice, the hearts of the people will be more inclined to the love of the persons chosen, and more ready to yield obedience.

3. Because of that duty and engagement of the people.

Uses. The lesson taught is three-fold:—

1st. There is matter of thankful acknowledgment in the appreciation of God's faithfulness towards us, and the permission of these measures that God doth command and vouchsafe.

2dly. Of reproof—to dash the councils of all those that shall oppose it.

3dly. Of exhortation—to persuade us, as God hath given us liberty, to *take* it.

And, lastly, as God hath spared our lives, and given us them in liberty, so to seek the guidance of God, and to choose in God and for God.”

This Constitution, which is the archetype of all modern written constitutions, was made and adopted by the people, in mass meeting at Hartford. The instrument associates all the “inhabitants and residents” of the plantations, without regard to ecclesiastical standing, as “one Publike State or Commonwealth.” Its purposes are declared to be the maintenance of “peace and union” of the people, the preservation of the “liberty and purity of the gospel of our Lord Jesus,” and the making of “laws, rules, orders and decrees.” The General Court is then established, with a governor to hold office for a year, six magistrates (assistants) to be chosen by the people, and deputies (representatives) to be chosen by the inhabitants of the several towns. Power as omnipotent as the power of the British Parliament is given to the General Court. The three towns are each allowed to send four deputies, and representation is to be proportioned to the population. Forms of oath for governor and magistrates were provided. The absence of all reference to the crown, the parliament, the proprietary, the clergy, or to any class, is as significant as the many references to the sovereignty of the people. We quote the oath:—

I, N. M., being chosen a Magestrate within this Jurisdiction for the yeare ensueing, doe sweare by the great and dreadfull name of the euerliueing God, to promote the publike good and peace of the same, according to the best of my skill, and that I will mayntayne all the lawfull priuiledges thereof according to my vnderstanding, as also assist in the execution of all such wholsome lawes as are made or shall be made by lawfull authority heare established, and will further the execution of Justice for the tyme aforesaid according to the righteous rule of Gods word; so helpe me God, etc.

The statement has been sometimes made, in histories and elsewhere, that this instrument was a treaty between three towns. There is absolutely no foundation for the statement, and it is a dishonor to the fathers who made this first people's constitution, and in whose presence, for this reason, we should always stand in attitude of salute and with uncovered head. Had this immortal instrument been a treaty between municipalities, it would have been no novelty, but, as an organic law of a free people, it came as a sunburst into the sky.

While we ought never to forget the debt we owe to the Connecticut town, which the General Court permitted to conduct its local affairs without interference, we should not fall into the blunder of investing it with a sovereignty which it never possessed, and least of all, of robbing the Constitution of 1639 of its largest and absolutely unique honor. Nor were there any "reserved" powers in the towns. This theory has been so often exploded by our highest courts that its suggestion is no longer admissible. The towns had no more reserved powers than the churches; indeed, the church organizations came much nearer to sovereignty than did the plantations before the adoption of the Constitution by the people. Mr. Campbell, in his interesting and suggestive book upon the Puritan, whose noble tribute to the low countries is just, even if its appreciation of the common law is imperfect, subordinates the Connecticut Constitution to the union of Utrecht, a union of provinces. If Mr. Campbell were right in supposing that the Connecticut Constitution was a treaty between municipalities, his conclusion would be sound, but the Connecticut Constitution was no such affair at all. It was purely and only a constitution formed by a people, and had no element of a compact between municipal powers.

While formal acts of incorporation to new towns were not passed in the seventeenth century, the usual act of the General Court granted to their inhabitants "such immunities, privileges and powers as the other towns in the colony have and do enjoy." Books and pamphlets by the score have been written upon the genesis and character of the New England town. Of more recent authors, Prof. Charles M. Andrews, of Bryn Mawr, has done excellent work upon the subject. Its origin has been credited to Phenicia, Greece, Rome, Italy, Germany and England. Without discussing the general subject, it is enough to say that our fathers, in Connecticut and Massachusetts, took the English parish for their general town model, and revised and modified its features by their ideas of ecclesiastical independence. The town was never a sovereign against the will of the General Court, nor pretended to be. As early as 1636, the Massachusetts General Court empowered the freemen of the several towns "to dispose of their own lands and woods," to "choose their own particular officers," and to "make such orders as might concern the well-being of their own towns, not repugnant to the laws and orders of the General Court." The powers of home rule and domestic control, which were granted by the General Court and by the Connecticut Constitution to towns, have made them not only mothers of legislatures and congresses, as the English parish is said to have been the "mother of parliaments," but it has trained the communities in self-respect and manly confidence, and the town meeting, so well adapted to former conditions, but an impossibility and an anachronism in our modern cities, has been a creator of American character, and an educator of American thought, and its streams of influence flow through our civil and military history.

The Connecticut Constitution of 1639 was an absolute and unrestricted grant by the people, with no reservations or limitations of power in favor of any person or community. American authors of history have with almost one voice pronounced this instrument, and in words of highest praise, to be the first-written constitution made by the people and establishing a government. Mr. Bryce says as much so far as the new world is concerned. Mr. Goldwin Smith, who locates the Charter Oak in Providence, agrees with Mr. Bryce so far as America is concerned, but doubts about Greece, Rome and Italy. He does not favor us, however, with a citation of any such instrument from the history of these countries. If there be such an instrument, earlier than the Fundamental Orders, which were inspired by Hooker, Ludlow and Hayne, and written by Ludlow, and adopted by the free planters at Hartford, January 14, 1639, all students of history would be glad to know what it is.

Before dismissing our study of this original Constitution, it is well to observe that, while its terms made no provision for its amendment, the ultimate right to add to and alter it was understood to remain in the people acting through the General Court. And this right was frequently exercised before the adoption of the charter, as the right to alter the charter was subsequently exercised. In 1660 the General Court submitted to the freemen a change in the Constitution limiting the choice of the executive, so that no governor could be his own successor. The freemen at their next meeting voted the amendment down. The General Court passed laws declaratory of the proper construction of the Fundamental Orders.

FUNDAMENTAL ORDERS OF NEW HAVEN.

On the 4th day of June, 1639, five months after the adoption of the Connecticut Constitution, the planters of New Haven met in Robert Newman's barn, and by a show of hands adopted the six fundamental orders submitted to the meeting by Rev. John Davenport, a leader of men. These orders were signed by the planters and made no recognition of the crown. Earlier than this the planters had agreed upon a "covenant" whose terms are not accurately known. It, however, made the Scriptures the supreme law of government, abolished entails and primogeniture, and suggested independence. The six fundamental orders adopted the Scriptures as the basis of ecclesiastical and civil government, and limited suffrage and office to church members, and did little more. Bancroft pithily says, "New Haven made the Bible its statute book and the elect its freemen." But the New Haven Constitution was the act of a free people, and, except for its religious bigotry, the beginnings of the New Haven Republic are hardly less interesting than the beginnings of Connecticut.

The orders in substance provide :—

1. That the Scriptures hold forth a perfect rule for men in their family, church and commonwealth affairs.
2. That the rules of Scripture are to govern the gathering and ordering of the church, the choice of magistrates and officers, the making and repeal of laws, the dividing of allotments of inheritance, and all things of like nature.
3. That all "free planters" were to become such with the resolution and intention to be admitted into church fellowship as soon as God should fit them thereunto.
4. That civil order was to be such as should conduce to securing the purity and peace of the ordinances to the free planters and their posterity.
5. That church members only were to be "free burgesses," and were to choose *from their own number* magistrates and officers to make laws, divide inheritances, decide cases at law, and transact all public business.
6. That the free burgesses, or church members, were to choose twelve of their number, and that these twelve were to choose the "seven pillars" to begin the church.

In 1643 the General Court of New Haven enacted a fundamental order relating to civil government. It made provision as follows :—

The General Court was to consist of the governor, deputy governor, three magistrates and eight deputies, two each from New Haven, Stamford, Milford and Guilford. In it the rights of the free planters, who were not church members, were limited to "their inheritance and to commerce." A particular court was given to each town. Proxy voting for commonwealth officers was allowed. The General Court was to meet twice a year, and the magistrates were to meet before the stated gatherings of the General Court to try important cases and appeals from the particular court. The ordinary trial by jury does not appear in the New Haven system.

The General Court was to maintain the purity of religion and "suppress the contrary," to make laws, to call magistrates to account, impose oaths upon the inhabitants, to assess and levy taxes. No law was to pass except by a majority vote of the inhabitants and the deputies as well.

The story of the relations of the two colonies from 1639 to 1665 is a story of manifest destiny on the part of Connecticut, and a brave but hopeless struggle for continued independence on the part of New Haven. The devout people of New Haven had no sympathy with the democracy of Connecticut and its suffrage was open to the ungodly. They wrote of the "Christless rule of Connecticut" to which, under the charter, they were at last compelled to submit, although many of the brave and independent planters of New Haven moved away, principally to New Jersey.

CHARTER OF 1662.

The colonies of Connecticut and New Haven both applied to King Charles II. for charters. The Connecticut charter of 1662 was granted. This instrument is of unparalleled liberality and almost, by its terms, made an independent state: it granted the power of absolute legislation, which the colonists repeatedly exercised even to the practical amendment and repeal of the charter itself. As to the ultimate source of its authority, Judge Swift says: "The application of the people for this charter, and their voluntary acceptance of it, gave efficacy to the government it constituted, and not the royal signature."

That the people of Connecticut intended to treat the charter as a royal recognition of their substantial independence is made clear by the fact that they always did so treat it. Common prudence called for a charter to insure the protection of the mother country against any other country. The importance of large territorial jurisdiction, including New Haven, required it. And a charter which left the people in full control of their own affairs could be but a blessing. And so when Charles was well established on his throne, the General Court voted to ask for "the continuance and confirmation of such privileges and liberties as are necessary for the comfortable and peaceable settlement of this colony."

A large part of the charter was drawn by the General Court, but additions were made and its form perfected by Winthrop himself, and its royal sanction was obtained by his adroit skill. It was substantially a recognition and endorsement of the old Constitution of 1639, and of the customs, traditions and laws of the colony. It gave power almost unbounded to the General Assembly (General Court). It continued the officers then in service, and in general continued the purposes and machinery of government as they were. There were slight changes in the powers of the executive; the number of assistants was fixed at twelve, to which it had already grown from the original number, six, and the deputies were limited to two from each "place, town or city," to be chosen by a major vote of the freemen. It left the judiciary to be created, as it had been, by the General Assembly.

Judge Baldwin, in his valuable paper upon the Connecticut Constitutions, which was read before the New Haven Historical Society in 1891, expresses the opinion that the terms of the charter left the real management of the colony with the governor and assistants. The charter is certainly vague in its distinctions between this body and the same body in association with the deputies, but the people at once put their own construction on it, and treated the deputies as members of the General Assembly. The right to convene the General Assembly was given to the executive. The provision in the old Constitution that the General Court could not be adjourned or dissolved without its own consent was omitted in the charter, as was the right of the

governor to throw a casting vote in case of a tie. The latter right was subsequently given to the governor by statute. The people did not hesitate to improve the charter by legislation, and by acts of the General Assembly to brush away the effect of anything in the instrument which seriously interfered with existing customs which were thought to be good.

The charter required a mass meeting of all the freemen at one place for elections;

“Governor, Deputy-Governor, and assistants of the said Company, and other officers of the said Company, or such of them as the said General Assembly shall think fit, shall be in the said General Court and Assembly to be held for that day and time, newly chosen for the year ensuing, by such greater part of the said Company for the time being, then and there present.”

It is true that the General Assembly was, by the charter, given power to change the “times and places” of elections; but no power is given to interfere with the popular convention at a single place, or to the freemen to vote by proxy. The usage of the colony had been to allow the freemen to send in their ballots by the hands of deputies. The people had no idea of changing their usage in the matter, even if in doing so they had to amend the charter. And so in 1670, the General Assembly enacted the method, which had been so long followed, of allowing the freemen to “attend and consummate” the election “in person or in proxie.” The General Assembly, against the provisions of the charter, elected the governor and lieutenant-governor when the people failed to elect. By far the most important departure from the charter, however, was the adoption of the system of two houses for legislation. Under the old Constitution, and until 1698, the General Assembly met in one chamber. Rhode Island had adopted the bicameral system, and the General Assembly of Connecticut broke away from all its traditions in taking this important step, whose wisdom no one now arises to doubt.

From these, and other less important, instances, it is clear that the people not only looked upon the charter as a confirmation of their own free government, but as an instrument which they had the power to reform. Judge Swift, writing near the close of the eighteenth century, seems to reflect the current earlier ideas when he says: “A constitution therefore that is unalterable by the legislature, should contain nothing but the outlines of the government, and leave it to the legislature to fill up the minuter parts, which will always authorize them to vary it according to the progress of improvement.” The General Assembly always decided for itself what was an “outline,” and what a “minuter part” in the charter. The colonial records covering this period, so ably edited by Dr. Charles J. Hoadley, will guide the historical student to much light upon this subject.

An incident of the charter, which is worthy of notice and highly significant of the cleverness of Winthrop, is the character of the oath which officials were required to take. Attention has already been called to the form of oath provided in connection with the Fundamental Orders. The charter seems to continue the obligations in the original form. Its silence, as well as its language, is noticeable. In their first mention in the charter, the oaths are described as “their several and respective corporal oaths for the due and faithful performance of their duties in their several offices and places.” In later parts of the charter the oath is referred to, and always as “the said oath.”

CHAPTER XXXV.

CONSTITUTIONAL HISTORY OF CONNECTICUT—Continued.

CONSTITUTION OF 1776.

IN October, 1776, three months after the Declaration of Independence, the General Assembly passed a notable statute, which is quoted later. Its eagerness to speak and act for independence has already been pointed out as characteristic of the colony. This patriotic pride was now to have a larger field of demonstration. In 1774, Dr. Stiles, President of Yale College, wrote, "There is to be another Runnymede in New England." Through the entire struggle with the mother country, Yale College, under the guidance of President Stiles, and President Daggett, who made one of the most picturesque features of the Revolution as he emptied the contents of his fowling piece into a platoon of British Regulars, and later President Dwight, was a very furnace of patriotism. Alone of the colonial governors, Jonathan Trumbull, whose efforts for the success of the American cause were hardly less effective than any other's but Washington's, and to whose services for the unborn Republic American history has yet to do full justice, dared to be a rebel, when he well knew that four halters were waiting for his own and his three sons' necks. Another typical Connecticut colonist, unskilled in literature and learning, and untrained in political science, but a patriot, a seer, and a fighter, Israel Putnam, impressed upon Stampmaster Ingersoll and Governor Fitch, by methods not common in diplomatic circles, and in language more forcible than elegant, the unwisdom of bringing that token of royalty into Connecticut, and no stamps came to this colony. When the Port bill oppressed the harbors of Massachusetts, that same old hero sent sheep and lambs to Boston, whose blood, he said, was a type of the sacrifice he and his Connecticut associates were ready to make in common defence. After Lexington, in 1775, he loosed his oxen, mounted his horse, rode seventeen hours to the scene of conflict, and in a few weeks became the real leader of the Continental troops at Bunker Hill.

Although the borders of her territory were seldom crossed by British troops, Connecticut sent thirty-one thousand nine hundred and thirty men, poorly fed, and worse clad, into the other states, to march through snow and mud, with bleeding feet, and to fight on battle fields, now classic and sacred, for the homes and the rights and the independence of the thirteen colonies. The atmosphere of the state was full of the ozone of democracy, and the temper of the General Assembly was ripe for the enactment of the statute of 1776, which re-asserted the rights of the people under the old Constitution and charter, and which clearly referred the sanctions of the charter to its adoption by the people.

The text of the Constitution of 1776 is as follows:—

AN ACT CONTAINING AN ABSTRACT AND DECLARATION OF THE RIGHTS AND PRIVILEGES OF THE PEOPLE OF THIS STATE, AND SECURING THE SAME.

"The People of this State, being by the Providence of God, free and independent, have the sole and exclusive Right of governing themselves as a free, sovereign, and independent State; and having from their Ancestors derived a free and excellent Constitution of Government whereby the Legislature depends on the free and annual Election of the People, they have the

best Security for the Preservation of their civil and religious Rights and Liberties. And forasmuch as the free Fruition of such Liberties and Privileges as Humanity, Civility, and Christianity call for, as is due to every man in his Place and Proportion, without impeachment and Infringement, hath ever been, and will be the Tranquility and Stability of Churches and Commonwealths; and the Denial thereof, the Disturbance, if not the Ruin of both.

Paragraph 1. Be it enacted and declared by the Governor, and Council, and House of Representatives, in General Court assembled, That the ancient Form of Civil Government, contained in the Charter from Charles the Second, King of England, and adopted by the People of this State, shall be and remain the Civil Constitution of this State, under the sole authority of the People thereof, independent of any King or Prince whatever. And that this Republic is, and shall forever be and remain, a free, sovereign and independent State, by the Name of the STATE OF CONNECTICUT.

2. And be it further enacted and declared, That no Man's Life shall be taken away; No Man's Honor or good Name shall be stained: No Man's Person shall be arrested, restrained, banished, dismembered, nor any Ways punished: No Man shall be deprived of his Wife or Children: No Man's Goods or Estate shall be taken away from him, nor any Ways indamaged under the Colour of Law, or Countenance of Authority; unless clearly warranted by the Laws of this State.

3. That all the free Inhabitants of this or any other of the United States of America, and Foreigners in Amity with this State, shall enjoy the same justice and Law within this State, which is general for the State, in all Cases proper for the Cognizance of the Civil Authority and Court of Judicature within the same, and that without Partiality or Delay.

4. And that no Man's Person shall be restrained, or imprisoned, by any authority whatsoever, before the Law hath sentenced him thereunto, if he can and will give sufficient Security, Bail, or Mainprize for his Appearance and good Behaviour in the mean Time, unless it be for Capital Crimes, Contempt in open Court, or in such Cases wherein some express Law doth allow of, or order the same."

The statute purports to be an organic act, and certainly became so by the acquiescence of the people. The preservation of the old charter, and its original, the Constitution of 1639, in that hour of independence, is a significant commentary upon the antecedent self-government of the colony under the protection of the crown.

CONSTITUTION OF 1818.

After the establishment of the independence of the United States, the question was discussed with great feeling, whether the state had in fact, any constitution. The General Court and General Assembly had not hesitated to amend the Fundamental Orders and the charter; and the act of 1776 was but a legislative act, in which the people had taken no direct part, but by acquiescence, and by taking the freeman's oath to be "true and faithful to the Constitution." The weight of opinion, however, was that the charter, which was universally felt, as Theodore Dwight wrote, to be "little more than a re-establishment of the first Constitution with somewhat more explicitness," was, in fact, an organic law. The claim that the commonwealth had no organic law had been made in the General Assembly, and occasionally discussed in pamphlets, in the last part of the eighteenth century. But the overwhelming sentiment of the state, which found expression in the written views of eminent judges and statesmen, was against the claim. Judge Swift, in his "System of the Laws of Connecticut," stated his views upon the subject as follows:

"The necessary consequence was that the renunciation of allegiance to the British crown, and the withdrawing from the British empire, did not in any degree affect or alter the constitution of the government. The constitution which originated from the people, and had been

practiced upon, continued in operation, after the Declaration of Independence, in the same manner as before, and was equally valid. The people were only discharged from a nominal allegiance to Great Britain. . . . Their internal government remained unaltered and the same. . . . The General Assembly ratified and confirmed the Declaration of Independence, they passed an act recognizing the ancient form of government, they made such alterations and introduced such amendments, as the change of circumstances required. If the principles before stated are true, then the conduct of the legislature was constitutional, and there was no necessity of calling a convention of the people to agree on the form of the government."

In 1804 the Republican party inserted a plank in its platform in favor of forming a new constitution, and at a meeting of Republican delegates from ninety-seven towns, it was declared "as the unanimous opinion of this meeting that the people of this State are at present without a constitution of civil Government." Five magistrates, justices of the peace, participated in the meeting, including Major William Judd, who was its chairman. The General Assembly promptly brought the offenders to book and their commissions were revoked by the unanimous vote of the Governor and Council, and by a large majority of the House of Representatives. The principal management of the case for the state was committed to the Hon. David Daggett, who was afterwards Chief Justice of the state. His argument was forcible, and to show how the majority of the people looked back of the charter to the Fundamental Orders for their Constitution, and also to show how shocking to him would have been the claim that the original Constitution was a compact between the three towns, we quote :—

"The United States formed their Constitution by delegates appointed by the Legislature, not chosen by the people. It was indeed ratified by conventions chosen by the people. The other States formed their Constitutions by Conventions or Legislatures, and in few instances have they been submitted to the people, for their adoption. But in Connecticut, where these justices, and others, have published to the world that no Constitution exists, the people actually met, and without the intervention of agents, by themselves, made a Constitution, which is now our Constitution. Heaven grant, that it may long continue ours! Yes, Sir, I shall show that, unfortunately for these gentlemen, they have struck at the only government ever formed upon entire popular principles.

"Thus situated, these first settlers remained till 1639, when the free planters all met at Hartford, and without the intervention of any delegates, formed a Constitution."

But other and powerful causes were stirring which resulted in the new Constitution. It was no longer a mere question of Constitution or no Constitution under the ancient laws. The power of the assistants, whose sessions in counsel were held with closed doors, was practically supreme in jurisprudence. They appointed all the judges and reviewed their decisions. Mr. Abraham Bishop contended that all the legislative, judicial and executive powers and the control of elections were "in the hands of seven lawyers." Major Judd said that the only power of the governor outside of the council was to fill up notarial commissions. Ecclesiastical and sectarian partisanship became an active and vociferous element in the discussion. The standing order, which was the old New England ecclesiastical way established by law, and whose civil society was the financial handmaid of the local church, had conceded their taxes to the Episcopalians in 1727, and to the Quakers and Baptists in 1729. The word "established" was dropped from the title of the old order in 1784, and in 1791 an act was passed giving dissenting Christians of every name a right to withdraw from the old church societies and to unite with

their own. But these concessions were unsatisfactory to the dissenting bodies, Episcopalian, Methodist, Baptist and Quakers, and they properly demanded absolute equality between sects. The grants to Yale by the General Assembly were offensive to the dissenting sects as the funds were in part used to educate ministers in the old faith. The "Stand-up law," so called, passed in 1801, which compelled electors to stand up at town meeting, and to disclose their choice of officers, was especially odious, as it prevented that secrecy of suffrage which was well guarded in the old constitutions, and which was and is a sacred Connecticut tradition. Partisan feeling upon national lines was intense, and the War of 1812 and the Hartford Convention added zeal and bitterness to the strife. Other causes might be cited, and the historical student will find the whole subject treated by Dr. J. Hammond Trumbull, in his valuable paper, "Historical Notes on the Constitutions of Connecticut." But the chief causes of the constitutional convention were restlessness under the old aristocracy, sectarian strife, a demand for a wider separation of the branches of sovereignty, a radical reform in the courts, and open sessions of both branches of the legislature, a demand for local and secret elections, the bitterness of national politics, and the ever-present desire of the "outs" to get "in."

The controversial literature of the day, which appeared in newspapers and pamphlets, was plain in statement and often scurrilous in tone. The complainants urged that ecclesiastical despotism had not been avoided by an escape from prelacy, that the democratic principles of the government were nullified by an oligarchy of rule and an aristocracy in society. The conservatives urged the old ways and steady habits of the colony and state, and found harsh words to describe the discontented agitators. The polemics of the day were discreditable, but perhaps no more so than contemporaneous pamphlets which were written in other parts of the country in discussion of national and local politics.

The "toleration" party was successful, and at the May session of the General Assembly, 1818, a constitutional convention was ordered.

The convention met August 16th, and adjourned September 11th. In its personal composition it embraced many distinguished leaders. Upon the Federal side of the chamber were ex-Chief Justices Jesse Root and Stephen Mix Mitchell, ex-Governor Treadwell, Gen. Nathaniel Terry, Hon. Aaron Austin, Col. John McClellan, and others. Among the delegates on the Republican side were Judge Pierpont Edwards, Alexander Wolcott, Rev. Ashbel Moore, Gen. Joshua King, and others no less prominent. The convention was fairly peaceable, and its conclusions were the result of concession and compromise. Indeed the radical Republicans were dissatisfied with it, and the Federals were not altogether offended by it. The Constitution was submitted to the people, and ratified by a vote of thirteen thousand nine hundred and eighteen in the affirmative, and twelve thousand three hundred and sixty-four in the negative.

This Constitution, as amended by twenty-eight articles, is the present Constitution of the state.

After a preamble, the first article of this instrument makes a declaration of rights, which is democratic in every line, and contains the choice principles of personal liberty and self-government which were the birthright and inheritance of the people of the state. We quote :

PREAMBLE.

The people of Connecticut, acknowledging with gratitude the good providence of God in having permitted them to enjoy a free government, do, in order more effectually to define, secure

and perpetuate the liberties, rights and privileges which they have derived from their ancestors, hereby, after a careful consideration and revision, ordain and establish the following Constitution and form of civil government :

ARTICLE I.

DECLARATION OF RIGHTS.

That the great and essential principles of liberty and free government may be recognized and established,

WE DECLARE,

Section 1. That all men, when they form a social compact, are equal in rights, and that no man, or set of men, are entitled to exclusive public emoluments or privileges from the community.

Sec. 2. That all political power is inherent in the people, and all free governments are founded on their authority, and instituted for their benefit; and that they have at all times an undeniable and indefeasible right to alter their form of government in such a manner as they may think expedient.

Sec. 3. The exercise and enjoyment of religious profession and worship, without discrimination, shall forever be free to all persons in this state, provided that the right hereby declared and established shall not be so construed as to excuse acts of licentiousness, or to justify practices inconsistent with the peace and safety of the state.

Sec. 4. No preference shall be given by law to any Christian sect or mode of worship.

Sec. 5. Every citizen may freely speak, write and publish his sentiments on all subjects, being responsible for the abuse of that liberty.

Sec. 6. No law shall ever be passed to curtail or restrain the liberty of speech or of the press.

Sec. 7. In all prosecutions or indictments for libels, the truth may be given in evidence, and the jury shall have the right to determine the law and the facts, under the direction of the court.

Sec. 8. The people shall be secure in their persons, houses, papers, and possessions from unreasonable searches or seizures, and no warrant to search any place, or to seize any person or things, shall issue without describing them as nearly as may be, nor without probable cause supported by oath or affirmation.

Sec. 9. In all criminal prosecutions, the accused shall have a right to be heard by himself and by counsel; to demand the nature and cause of the accusation; to be confronted by the witnesses against him; to have compulsory process to obtain witnesses in his favor; and in all prosecutions, by indictment, or information, a speedy public trial by an impartial jury. He shall not be compelled to give evidence against himself, nor be deprived of life, liberty, or property, but by due course of law. And no person shall be holden to answer for any crime, the punishment of which may be death or imprisonment for life, unless on a presentment or indictment of a grand jury; except in the land or naval forces, or in the militia when in actual service in time of war or public danger.

Sec. 10. No person shall be arrested, detained, or punished, except in cases clearly warranted by law.

Sec. 11. The property of no person shall be taken for public use without just compensation therefor.

Sec. 12. All courts shall be open, and every person, for an injury done to him in his person, property, or reputation, shall have remedy by due course of law, and right and justice administered without sale, denial, or delay.

Sec. 13. Excessive bail shall not be required, nor excessive fines imposed.

Sec. 14. All prisoners shall, before conviction, be bailable by sufficient sureties, except for capital offences, where the proof is evident, or the presumption great; and the privileges of the writ of *habeas corpus* shall not be suspended, unless when, in case of rebellion or invasion, the public safety may require it; nor in any case, but by the legislature.

Sec. 15. No person shall be attainted of treason or felony by the legislature.

Sec. 16. The citizens have a right, in a peaceable manner, to assemble for their common

good, and to apply to those invested with the powers of government, for redress of grievances, or other proper purposes, by petition, address, or remonstrance.

Sec. 17. Every citizen has a right to bear arms in defence of himself and the State.

Sec. 18. The military shall, in all cases and at all times, be in strict subordination to the civil power.

Sec. 19. No soldier shall, in time of peace, be quartered in any house without the consent of the owner; nor in time of war but in a manner to be prescribed by law.

Sec. 20. No hereditary emoluments, privileges, or honors shall ever be granted or conferred in this State.

Sec. 21. The right of trial by jury shall remain inviolate.

Under the first section of this article, the Supreme Court held in *Gas Light Co. v. Gas Light Co.*, 25 Conn. 34, that an exclusive right to lay gas-pipes in the streets of a particular city is void as creating a monopoly. In a later case, *Citizens' Water Co. v. B. H. Co.*, 55 Conn. 1, the same court, after arguments of singular ability by most eminent counsel, held that such a privilege, when secured by the explicit contract of a city acting within its chartered powers, must be protected. The language of the opinion by Judge Pardee is characteristic in its ethics and phraseology:

"It is the judicial duty to preserve contracts inviolate rather than destroy monopolies. Communities may endure monopolies, but they cannot endure the violation of contracts."

Why a contract made by a municipality, under legislative authority, should be deemed to be more sacred than a contract made by the state itself, it is not easy to see. If either were amendable by the legislature, or were an interference with the police powers of the state, which are not proper subjects of contract, the doctrine of the Gas Company case might be easier to understand. When the legislature gave the exclusive sale of intoxicating liquors to a "town agent," the Supreme Court held that there was no offence to this article in the law.

Sections nine and twenty-one have been construed by the Supreme Court in many interesting particulars. Restrictions of argument of counsel are held to be constitutional. There is no constitutional right to a jury in justice of the peace trials, nor on certain appeals from Probate. Appeals from justices may be restricted. The statutory rights to grant nonsuits by courts, and of the accused to elect to be tried by the court are held to be proper. It has been the old Connecticut custom to have damages after default assessed by the court. The practice is almost wholly confined to actions for personal injuries, which usually find for a defendant, a private or municipal corporation. In these cases, the opinion of a jury upon a question of negligence is often open to criticism, and the estimate of damages by the panel has been known to be more generous to the plaintiff than just to the defendant. The practice of such defendants is to submit to a default which gives the plaintiff nominal damages, and the question of any larger damages is left to the court. If there has been no negligence imputable to the defendant, or if the plaintiff's wrong has contributed to the injury, only nominal damages are awarded. This custom interferes with a habit, which affects victims of railroad and street-highway accidents, of bringing speculative suits. The custom, however, is held by the courts to be no infraction of the right of trial by jury.

A critical spectator of a modern election ceremony, when the governor-elect enters the hall of legislation surrounded by a brilliant staff in full uniform, with flashing swords and gold braid galore, might imagine that the eighteenth section, subordinating the military to the civil power, was obsolete. The modern custom should be honored by its breach. Even if the governor-elect had already taken his oath, he should never come into the General Assembly as a commander-in-chief of the state militia.

The second article clearly distributes the powers of government, a distribution which was loudly called for in the demand for the Constitution, but which has not been scrupulously recognized by our highest court.

The Supreme Court, in a case tried in 1831, held that the Constitution was not a grant, but a limitation of power. So broad had been the powers of the old General Court, and its successor, the General Assembly, that the ghost of its omnipotence would down at no bidding. In an able opinion, exhaustive of the subject of legislative powers which are unlimited by the Constitution, Judge Loomis, in *Wheeler's Appeal*, 45 Conn. 306, says:—

“If, then, an act of the State Legislature is not against natural justice, or the national Constitution, and it does not appear affirmatively and expressly that there is some provision in the Constitution forbidding it, we must hold it to be *intra vires* and valid.”

It will be observed that this case, like several other Connecticut cases, recognizes the supremacy of “natural justice,” an authority held in less respect, when there is a written organic act, by some text-writers.

Unlike the constitutions of several sister states, the Connecticut organic law in creating its judicial department, says “the powers and jurisdiction of which Courts shall be defined by law.” The argument has often been made from this language that the judiciary was still measurably subservient to the Legislature. The soundness of the argument has never been fully assented to by the Supreme Court, or by the best wisdom of the bar. But “judicial legislation” has been a common incident of the sessions of the General Assembly. Divorces have been granted, charities administered, defective titles confirmed, restraints imposed by will upon the sale of lands have been dissolved, sureties released, a justice of the peace judgment annulled, irregular appeals validated, a usurious contract made legal after the contract had been sued and judgment by default obtained, and when the cause remained only to be heard in damages.

It is not certain, perhaps not probable, that all the judicial acts of the General Assembly would have been sustained by the Courts.

An act was passed some years ago, which was designed to nullify a ruling of the Railroad Commissioners, which had been made in accepting the location of a railroad company, in the matter of the Hancock Brook road near Waterbury. The courts had declined to interfere with the Commissioners' ruling, on the ground that their judgment was final. The assistance of the legislature was sought and obtained by the town of Waterbury. But, when proceedings were brought before Judge Park in the Superior Court, he refused to enforce the law. His ruling was taken to the Supreme Court for revision. After consultation, a judge discovered that he was disqualified, and the tribunal was left without a quorum; but the majority of the court were in accord with Judge Park's judgment, and the motion in error was abandoned. Judge Butler, one of the ablest and most analytical judges who have adorned the bench of the Supreme Court, informed the writer of this article, who was of counsel for the railroad company in opposing the statute, that it was a clear invasion of the rights of the judiciary, as defined in the article now under consideration. Had Judge Butler filed an opinion upon this clause of the constitution, as he expected to do if the case had been pressed to a conclusion, emphasizing and enlarging upon his opinion in *Brown v. O'Connell*, 36 Conn. 433, it is not impossible that some of our later decisions would have been affected by it. There have been hints in several recent decisions that this article in the Constitution meant what it said, and perhaps more than the earlier decisions seemed to imply.

The third article relates to the legislature and elections. The legislature is bicameral. The Senate originally consisted of twelve members, elected by the people. By amendments the Senate now consists of twenty-four members, who are elected by districts. The House represents the towns, according to their then-present representation. The article limits the representation of new towns, and restricts the choice of representation to electors of the several towns. While this restriction had long been the usage of the state, there was no written law confining the choice of representatives to the residents of the individual towns. The sessions of the General Assembly were made annual. They have since been changed to biennial sessions.

The canvass and declaration of votes is provided for, and by amendment has been somewhat changed. Each house is made the final judge of the election returns and qualifications of its own members. Provision is made for parliamentary officers of the houses, the number requisite for a quorum, adjournments, punishment and expulsion of members, calls for yeas and nays, keeping journals, privileges from arrest, open sessions, and freedom of speech without question anywhere.

The eighth section of this article provides in its final sentence that each house "shall have all other powers necessary for a branch of the legislature of a free and independent state."

The fourth article relates to the executive, who must be thirty years old, and whose term of office is fixed at one year. By amendment his term of office is enlarged to two years. The state officers are chosen by majority vote of the people, and if there is no majority, the choice is made by the legislature. The comptroller was originally appointed by the General Assembly. The governor is commander-in-chief of the militia, may grant temporary reprieves except in cases of impeachment, signs all commissions, can veto bills, which may be passed over his veto by a majority vote in each house. This article creates the offices of governor, secretary, comptroller, treasurer and sheriff.

The second section of the article as amended in 1875 and 1884 makes provisions for the election of governor as follows:—

"When such ballots shall have been received and counted in the presence of the electors, duplicate lists of the persons voted for, and of the number of votes given for each, shall be made and certified by the presiding officer, one of which lists shall be deposited in the office of the town clerk within three days, and the other, within ten days after said election, shall be transmitted to the secretary, or to the sheriff of the county in which such election shall have been held. The sheriff receiving said votes shall deliver or cause them to be delivered to the secretary within fifteen days next after said election. The votes so returned shall be counted by the treasurer, secretary and comptroller within the month of November. A fair list of the persons and number of votes given for each, together with the returns of the presiding officers, shall be, by the treasurer, secretary and comptroller, made and laid before the General Assembly, then next to be holden, on the first day of the session thereof; and said Assembly shall, after examination of the same, declare the person whom they shall find to be legally chosen, and give him notice accordingly. If no person shall have a majority of the whole number of said votes, or if two or more shall have an equal and the greatest number of said votes, then said Assembly, on the second day of their session, by joint ballot of both houses, shall proceed without debate to choose a governor from a list of the names, of the two persons having the greatest number of votes, or of the names of the persons having an equal and highest number of votes so returned as aforesaid. The General Assembly shall by law prescribe the manner in which all questions concerning the election of a governor, or lieutenant-governor, shall be determined."

This constitutional provision is peculiar to Connecticut, and several of its terms are attributable directly to the controversies which preceded the convention.

The sovereignty of the people, as expressed in the electors' meeting, was carefully guarded. At the same time, the same popular sovereignty, enthroned in the General Assembly, was kept well in view.

The Supreme Court, in two celebrated causes, has given construction to this section of the article. In December, 1862, the General Assembly passed a statute enabling the electors, who were in military service, to vote in camp, and requested the governor to ask the opinion of the Supreme Court as to its constitutionality. Their opinion was adverse to the validity of the law, and may be found in the 30th Connecticut Reports, at page 591. The Court spoke by Judge Butler in his own direct language and clear thought. The legal conclusions of the Court in the matter are summed up as follows :

" In this mandate, thus amended, all the essential details of time, place, and manner of proceeding, are fixed, viz. :

" 1. The time—the first Monday in April.

" 2. The place—the meetings of the electors.

" 3. The voting—to be at the call of the presiding officers, in the presence of the electors, and in such order and manner as the General Assembly should direct.

" 4. The votes to be received, counted and declared in the presence of the electors.

" 5. Lists of the votes so given, received, counted and declared, to be made and certified by the presiding officers of the electors' meeting.

" 6. One of those lists to be returned to the secretary of the state, the other to the town clerk.

" 7. The lists so certified and returned to the secretary to be canvassed by the treasurer, secretary and comptroller, and aggregate lists made therefrom.

" 8. And the lists so returned, with those made by the canvassers, to be presented to the General Assembly on the first day of its session.

" 9. The General Assembly to examine the lists of the presiding officers and the canvassers, and declare the choice evidenced by them, and notify the several persons elected "

The opinion of the Court was followed; and the constitutional amendment adopted in 1864, and hereinafter cited, made sure for the soldiers their electoral privileges.

The other celebrated cause is the case of the State ex rel. Luxon B. Morris v. Morgan G. Bulkeley, 61 Conn. 287. Nearly one hundred pages of the volume are given to the report of this case, including a summary of its facts, the elaborate briefs of counsel, and the opinions of the judges. The information was in the nature of *quo warranto* and set forth in detail the results of the November election in 1890, and the acts of the two legislative bodies, and to its allegations the defendant demurred, and the questions arising on the demurrer were reserved for the advice of the Supreme Court. The controversy engaged the interest and feelings of the entire community, and the meaning of the Constitution was brought directly in issue. A new ballot law, more stringent in its features than its predecessors, added to the confusion. Typographical mistakes were claimed to be "marks" within the law, an unnecessary use of the preposition "for" by the zealous advocates of liquor prohibition had disfranchised many of them by the rulings of moderators, and many other irregularities, of more or less importance, appeared in the canvass. Upon the face of the moderators' returns, and as they appeared in the fair list made by the secretary, treasurer, and comptroller, Governor Morris, whose plurality of votes was a large one, also received a majority of the popular vote. The fair list of the state canvassers, however, stated the reasons for which other ballots had been excluded, and that there was evidence of a clerical error in the returns of one of the towns.

The communication of the canvassing board failed to show that Governor Morris had a majority of the ballots, including the rejected ones, and after the correction of the clerical error. The fair list and the canvassers' returns were submitted to the House of Representatives, and by that body transmitted to the Senate. The House then passed votes which were intended to keep its first legislative day continuously alive by taking a "recess," and this "recess" arrangement was continued for a long period. The Senate examined the fair list and "found" and "declared" that Governor Morris and his associates on the state ticket had received a majority of the votes and were elected. Governor Morris was sworn by one of the senators. The Senate resolutions were returned to the House, and the popular branch thereupon appointed a committee "to make examination of the returns of the presiding officers of the electors' meetings for the purpose of making the examination thereof required by the Constitution." The committee in due time reported and found the facts in the several cases of disputed ballots and clerical errors, and that there had been no majority choice for governor, and that Governor Morris and General Merwin were the two leading candidates.

On the 12th of February, the Democratic candidate for comptroller was declared by the House to have been elected. On the 17th of March, to which date the sessions of the House had been kept in being by "recess," that body adjourned until November 11, 1891. Meantime the comptroller had undertaken to act as custodian of the capitol, an undertaking which was unfavorably received by the executive incumbent. In the use of both strategy and force, the comptroller was a sorry match for the executive, and the governor remained in possession of the fort.

Unsuccessful efforts were made by friends of peace to have the questions submitted, by the Legislature itself, to the Judiciary. In the language of the Court, there was "an entire collapse of the Legislative Department," an experience which brought some inconveniences and frustrated the will of the people in their election. The omission of biennial legislation was not, however, an unmixed evil. One branch of the Legislature was democratic, and followed the traditions of the old Republican party in declining to consent to any review of the action of the moderators done in presence of the electors at their meetings, and, therefore, peremptorily declined to use the information called for by Section 240 of the Statutes, which required the moderators to file with their returns lists of rejected ballots, and reasons for their rejection. The other branch was Republican, and followed the traditions of the old Federal party in favor of the supreme power of the General Assembly.

Were the two bodies representative of the people, and not of towns and territory, the large plurality given to Governor Morris would have practically insured his election upon a joint-ballot of the two Houses, while in fact the partisan affiliations of a majority of the two Houses in joint convention required them to vote for the minority candidate. In the progress of the legislative quarrel there were occasional differences in the ranks of the two parties. When the Senate attempted to declare Governor Morris elected, as the result of their separate "finding" and "examination," the senator from the First District, who was of the party in the majority in the senate, declared that "he could not see how the eagle could fly with one wing." But, in their construction of the constitutional returns of the moderators, the Legislature divided strictly upon party lines. This fact, and the tone of the partisan press, and the presence in the lobby of two "steering" committees, awakened a general suspicion, and elicited general comment to that effect, that partisanship rather than patriotism was the chief legislative inspiration. The suspicion was put to rest, and the comment rebuked by the Supreme Court in its opinion, which said: "The unpleasant sugges-

tion that either House of the Assembly is acting from partisan motives can find no place in the mind of the Court."

Upon the trial of the *quo warranto* case, the principal questions raised were :

"(1) The right to test the Governor's title by the Superior Court.

"(2) The right of the General Assembly, in 'examining' the fair lists and 'finding' the choice of the people, to go behind the rulings of the moderators in electors' meetings.

"(3) The duty of the incumbent Governor to retain his office until a successor should appear who had been declared by the Assembly to have been elected as his successor.

"(4) When does the second day of the session end?

"(5) One or two technical objections to the information."

The Court unanimously sustained the demurrer, Judge Carpenter dissenting from some of the views expressed in the opinion.

The conclusions of the Court upon the principal questions are as follows :—

"1. That the declaration of the result of an election of governor is an indispensable adjunct to the choice by the electors, and furnishes the only authentic evidence of what the choice is.

"2. That the Constitution contemplates the making of the declaration in all cases by the General Assembly, and that the declaration when thus made shall be final and conclusive.

"3. That the declaration is to be made by both houses of the Assembly, acting jointly or concurrently. A declaration by one house without the other could have no effect.

"4. That there having been no legal election in this case, the defendant remained the *de jure* as well as the *de facto* governor of the state.

"The Constitution provides for no evidence of the election of a governor from the examination of which the General Assembly is to make the finding and declaration, except the 'fair list' prepared by the treasurer, secretary and comptroller and the 'returns' of the presiding officers. In the absence of all legislation and in all ordinary cases the intent of the Constitution would seem to be that the General Assembly should declare that result which is shown by this list and these returns.

"If there should hereafter be legislation providing that other evidence should be admitted, the intent would seem to be equally clear that the Assembly should also examine that evidence.

"The wisdom of the General Assembly is left unfettered as to the laws by which it shall prescribe a manner for the determination of questions concerning the election of governor. It may require other and more complete returns and from other officers, or may create other tribunals to hear and report on such matters, but such returns or reports must be laid before the General Assembly on the first day of the session, to the end that it may itself make the final examination and declaration as required by the Constitution.

"Sections 239 and 240 of the General Statutes are such further provisions on the subject, and appear to be a compliance with the direction of the Constitution in this behalf; and what the General Assembly was commanded by the Constitution to prescribe, it would be its duty to examine. The examination required should be sufficiently full to determine who is legally chosen governor, so that the person who is declared to be chosen shall have an unimpeachable title to the office.

"The time and manner of examining must be determined by a consideration of the means provided or which may hereafter be provided for its performance, and with reference to that condition of things which will exist when the General Assembly shall, by suitable laws, have directed as to the mode of performance.

"The Constitution requires that the list and returns shall be laid before the General Assembly on the first day of its session, and that, if it shall find that there has been no choice of Governor it shall proceed to make choice the second day. This would seem to make it necessary that the examination of the list and returns should be made by at least the second day of the session. But whether the General Assembly has power to act in the matter after the second day: *Quære*. The precedents, and the general rule of a strict observance of constitutional requirements, are against the existence of such a power.

“To decide what person is lawfully elected to any office is a judicial process, and where there is no tribunal specially authorized to make such decision the courts must decide. And the courts always have jurisdiction where the decision of the special tribunal is not final and conclusive; and where such special tribunal refuses, or from any cause fails to act, the court, upon general principles and to prevent a failure of justice, and, perhaps, to prevent anarchy and misrule, would seem to be authorized to make the decision.

“The Constitution is a limitation of the powers of the General Assembly in all cases covered by its provisions; leaving its powers unimpaired in other respects.”

The fifth article vests the judicial power in a Supreme Court of Errors, a Superior Court and such inferior courts as the General Assembly may establish, “the powers and jurisdiction of which courts shall be defined by law.” Justices of the peace are also to be chosen. Judicial officers are superannuated at seventy years and may be removed by the governor on impeachment by a two-thirds vote of each house. Amendments provide for the election of judges of probate for the term of two years. The term of judges of the Supreme and Superior Courts is limited by amendment to eight years, and these judges are to be chosen by the Legislature upon the nomination of the governor. Judges of the courts of Common Pleas and District courts are to be chosen for four years, and of city and police courts for two years.

The sixth article concerns the qualifications of electors. White male citizens of the United States twenty-one years of age, of good moral character, residents of the town for six months and settled there, are entitled to the privileges of an elector. A slight property qualification is added with alternative provisions enough to make it insignificant. By amendments, the property qualification and the color line have been abolished, an intelligence standard, tested by the capacity to read the Constitution, has been added, and antecedent residence in the state for a year required in place of a legal settlement. It provides also for forfeiture of an elector's privilege by a conviction of bribery, forgery, perjury, duelling, fraudulent bankruptcy, theft or other offence for which an infamous punishment is inflicted. Restoration of an elector's privileges upon a two-thirds vote of both branches of the General Assembly, was provided for by amendment. Electors may hold any state office unless otherwise provided by the Constitution. The selectmen and town clerk are made final judges of the qualifications of electors. Not even the highest courts can set aside their judgments. See *Freeman v. Selectmen of New Haven*, 34 Conn. 414. Only the two houses of the Legislature in passing upon the election of their own members can overrule the selectmen and town clerk. This feature of the article is at least an anachronism. The high right of an individual to participate in the government of the state, whose constitution honors his credentials, should not be finally decided by a tribunal which is usually unskilled in law and political science, and which is sensitive to the calls of partisanship. The reason of establishing this tribunal is doubtless found in the necessary limitations of time, as the questions of electors' qualifications are settled within a few days of the election. And while the case of *Freeman v. Selectmen* (*supra*) is undisputed law, in the suit of *Perry v. Reynolds*, 53 Conn. 527, the Supreme Court does not hesitate to pass upon the qualifications of an elector, although their opinion would have only a prospective effect upon the selectmen, and that only incidentally. The case excuses the selectmen from mistakes and holds them only responsible, under the statute and common law, for “wanton and malicious” conduct. It is worthy of notice, as suggested in the case last cited, that the overpowering currents of patriotism which so clearly run in the traditions and experience of Connecticut, have made an abuse of its power by the board an unusual occurrence. But with the growth of the State, and especially with the increase of population in

cities, a tribunal to pass upon the qualifications of voters should be provided, primarily or by appeal, with larger familiarity with the principles of jurisprudence and political science than is usually found in a board consisting of selectmen and a town clerk.

The seventh article relates to religion, and in addition to a positive declaration of the duty of all men to worship the Supreme Being in the "mode most consistent with the dictates of their conscience," and to a recognition of Christian sects, makes sectarian supremacy impossible, and gives to every person the right to withdraw from any ecclesiastical society.

The eighth article confirms the charter of Yale, and provides for perpetuity of the school fund.

The ninth article relates to impeachments.

The tenth article consists of general provisions. It provides for oaths, gives the towns power to choose selectmen, which is an office, under that name and the earlier one of townsmen, as old as the colony, and inferior police officers, as may be regulated by law. It preserves outstanding rights, and continues incumbents in certain offices, and excludes from membership of the legislature certain federal and state officials.

The eleventh article provides for amending the Constitution by amendments to be proposed in the lower house, and to be passed there by a majority vote, and at the next session to be passed by a two-thirds vote of both branches of the General Assembly, and then to be ratified by the people.

The question has been many times raised whether this limitation by the people of the method of change in the organic law, prevents the adoption of a new constitution in any other way, as by a constitutional convention. Authorities can be found favoring both views, but the closest decisions, in Rhode Island and Massachusetts, would seem to limit orderly changes in the organic law to the method which the people themselves have provided in the constitution. All discussion, however, concedes that, if a convention were to be called by the General Assembly, and the action of the convention were to be ratified by the people, the voice of the people would be conclusive.

The Constitution limited elections to a ballot. An amendment added to "ballot" the words "either written or printed." Hartford and New Haven were made associate capitals; in 1873 Hartford was made sole capital. The compensation of members of the General Assembly was fixed by amendment, and extra compensation to public officers during their continuance in office is forbidden. Aid to railroads by municipalities was forbidden by amendment in 1877, which is wise legislation, but which belongs to statutory law. By amendment two representatives were allowed to towns of five thousand inhabitants, and all other towns were allowed their present representation. New towns must have twenty-five hundred inhabitants or vote for representatives with the old town. In 1864 a patriotic amendment was passed, securing the exercise of their right of suffrage to the electors who were serving in the army. The limits of this article forbid the enumeration of several features of the constitution which are of minor importance, or of giving in detail other provisions in matters which are more important. The most radical amendments which have been suggested and disapproved are those which relate to a call of a constitutional convention, and the one which gives authority to judges to accept the verdict of nine jurors.

Such is the present Constitution. Owing to the many amendments added to the original, its present form is unsymmetrical, but it is an organic act of exceptional wisdom. It has one element of weakness and injustice. Neither branch of the Legislature represents the people of the commonwealth. The upper House

represents the people of the several senatorial districts, but the districts cannot be established according to population. Two senators are secured for each county. The lower House is representative of the towns, and not of the people at all.

It is a strange example of the irony of history, that the commonwealth of Connecticut, which is the mother of democracy in America, and the first people in history to establish self-government by a written constitution, occupies the exceptional and solitary distinction of making an artificial entity, the town, its sovereign, and taking the honor, duty, responsibility and right of sovereignty from men, living beings, descendants and successors of Roger Ludlow and Thomas Hooker and children of the Heavenly Father.

This unenviable feature of the constitutional law of the state, long ago abandoned by nearly all other representative governments, is not the result of design, but of new conditions. The Constitution of 1818 practically raised the mechanic to social standing, but did not contemplate the great change so soon to come to the commonwealth, making it a manufacturing state with new centres of population. Then the towns were much alike,—small, agricultural, with a church, a school-house, a green, and a stalwart community, whose tastes and views and occupation were largely kindred. To-day three cities contain nearly one-quarter of the population of the state, and even a larger proportion of its wealth, enterprise and business activity.

By the census of 1890 New Haven, Hartford and Bridgeport contained a population of one hundred and eighty-eight thousand one hundred and forty-one, while the population of the whole state was seven hundred and forty-six thousand two hundred and fifty-eight. At the presidential election of 1896 they cast nearly forty-nine thousand votes out of a total of one hundred and seventy-four thousand five hundred and ninety-four. These three cities have three votes in a senate of twenty-four members, and six votes in a house of representatives with two hundred and fifty-one members. The intolerable injustice of this is constantly increasing, the cities are gaining, the towns are dwindling. Seventy-nine out of one hundred and fifty-three towns in the state lost population in the decade 1880–1890. The legislature is the chief department of government. The lower house is the leading branch of the legislature, and the demand for a proper and democratic basis of representation in it must soon be conceded.

No child of Connecticut, or of Connecticut ancestry, can review the history of its constitutional law but with love and reverence, no friend of free government can study it but with gratitude and admiration. It is a story of brave individuality, of the pioneers working out human freedom in law, and of progress into new light and truth.

The legend upon the state seal recognizes the creating and sustaining care of Almighty God. Absolute allegiance to Him is written in the several constitutions; under Him, and under Him only, the people of Connecticut were the first to assert, and have always maintained, the supreme power of the commonwealth, a commonwealth bounded by the broadest definitions, and bright with the light of the best visions of human brotherhood.

CHAPTER XXXVI.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS.

BY WILLIAM HAMERSLEY, LL.D.

SETTLEMENT OF THE RIVER TOWNS—FIRST MAGISTRATES—THE "JURISDICTION OF CONNECTICUT."

IN 1636 the southern valley of the Connecticut was a wilderness, beyond the administrative range of any government; and such rights of sovereignty within its territory as governments then claimed on the vague ground of discovery were in doubt between England and Holland. No one had a title to the soil except that derived from possession; no one had a right to exercise any functions of government except such as might be allowed by the newly-arrived immigrants, and maintained with their consent. The colonies of Plymouth and Massachusetts Bay asserted no claim to ownership or jurisdiction. The only definite assertion of jurisdiction was the claim put forth by Arthur Hazlerig and others, who, acting for Lord Say and Seal, Lord Brook and "the rest of our company" under the nebulous Warwick patent, appointed, on July 18, 1635, John Winthrop, Jr., "Governor of the River Connecticut with the places adjoining thereto." Between 1633 and 1636 a few inhabitants of Plymouth Colony, and more from the discontented towns of Dorchester, Watertown and Newtown, in Massachusetts Bay, emigrated to Connecticut and established three plantations or towns, named after the three towns of the Bay from which the inhabitants mostly came, and shortly after called Windsor, Wethersfield and Hartford. These towns were self-governing communities, managed by a town meeting of the planters, and a committee appointed by such meeting for ordering the affairs of the town, at first called townsmen, and fifty years later known as selectmen. The plans of the settlers involved the acquirement of additional territory, and the establishment of an independent jurisdiction; for the execution of these plans they had no legal warrant. Their relations with Massachusetts Bay were somewhat strained, as that government had opposed their removal for the purpose of setting up a new jurisdiction; the claims and intentions of the grantees under the Warwick patent, represented by the younger Winthrop, were uncertain and possibly threatening; the Dutch had a sort of foothold and asserted antagonistic rights; the necessity of some show of legality was keenly felt. Such considerations led the three towns to secure, under the form of a commission for their magistrates, a quasi acknowledgment of their right to an independent government. This commission was granted, March 3, 1635-6, by the General Court of Massachusetts Bay, acting on behalf of its own members, and John Winthrop, Jr., on behalf of "certain noble personages" yet in England, interested in Connecticut

river, and purported to authorize, so far as they had the power, Roger Ludlow, William Pinchon, John Steele, William Swain, Henry Smith, William Phelps, William Westwood, and Andrew Ward, to "have and determine in a judicial way within said plantation" all civil controversies, to punish misdemeanors, and to make such orders for conducting the affairs of said plantation "in trading, planting, building, lotts, military discipline, and defensive war," as might best conduce to the public good; and to convene the inhabitants of said towns by way of court to proceed in execution of the power and authority aforesaid. The commission was not under any circumstances to extend longer than one year from the date thereof. Fortified with this semblance of legality, and doubtless relying somewhat on an understanding reached with Winthrop and the authorities of the Bay during the negotiations which resulted in this nondescript commission, the inhabitants of the three towns established a common government and asserted their right to exercise the powers of a state or commonwealth, under the name of the "Jurisdiction of Connecticut."

The governmental germ that gave life to the feeble "Jurisdiction" has slowly developed, adapting its essential principles to changing circumstances until in 1896 we find its product in the present state with a history rich in achievements, a government firmly rooted in that history administered through separate and independent departments, and a jurisprudence in harmony with the principles common to the science of law in all states, but peculiar to itself in the process of its development. The intervening two hundred and sixty years disclose an evolution similar to that which may be traced in the history of all governments whereby the germ of absolute and undivided power, through change after change, finally unfolds into the divisions and limitations of a modern free state. In the beginning all power is centred in a single governor, who is king, legislator and judge. So it was in Connecticut, but with this curious difference: the single governmental will was not that of a prince, nor even of an executive council, but of a court. The governmental power was not represented by any executive making laws and rendering judgments to enforce its will, but by a judiciary making laws and enforcing them in aid of the administration of justice. This difference was a necessity of the situation and of the character of the people, and serves to explain some things in the process of development.

A study of the expansion of the embryo "jurisdiction" into the modern state would cover a field of exceeding interest; but it is my present purpose only to sketch the development of the Connecticut system of courts and law from this original governmental court; the depository of all power.*

* Most of the information I have utilized has been obtained from the Colonial and State records edited by Dr. Trumbull (Vols. 1 and 2 of Col. Rec.) and by Dr. Hoadly, and the collections of the Connecticut Historical Society, especially Vols 4 and 5, edited by Miss Mary K. Talcott. It has not been deemed best to burden the text with citations.

CHAPTER XXXVII.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS—*Continued.*

1636-1662.

FIRST WRITTEN CONSTITUTION—BEGINNINGS OF A COMMON LAW—
THE REAL FOUNDERS.

THE term of office of the members of the first "court" expired March 3, 1637; and on May 1st of that year we find a "General Court" assembled at Hartford, consisting of two magistrates chosen for each town and three delegates called "committees" from each town. The records do not show whether this "General Court" was convened by the members of the provisional court, or was called and the election held in pursuance of the joint action of the three towns; the latter course was the one probably taken. The commission had served its main purpose, and the towns proceeded to exercise through the General Court, constituted and elected in accordance with their agreement, such powers as they saw fit; the first action being a declaration of "an offensive war against the Pequot." The towns continued a general or "jurisdiction" government through their magistrates and committees assembled in general court, until January 1638-9. There was very little litigation, and what causes were disposed of were tried by the court sitting as a "General Court," *i. e.*, for the exercise of all powers, or as a "Particular Court," *i. e.*, a session ordered for the trial of a particular cause. The first serious piece of legislation was the framing of a law for the "combination and confederation" of the inhabitants of the three towns, subsequently called the "fundamental orders," which was "voted" on January 14, 1638-9.

The record does not state specifically whether this law was "voted" by the inhabitants individually or by their General Court. The fact that the records contain little, if any, intimation that the inhabitants were ever called upon to vote individually on any matter relating to their general or "jurisdiction" government, except in the choice of magistrates and committees; that the General Court chosen for the preceding April was in session on the same day (January 14th), and an order of that court relating to the duties of treasurer is recorded as passed on that day; and that these fundamental orders, like any order, were subsequently changed at the will of the General Court; seems to indicate pretty decisively that the law was enacted by the inhabitants of the three towns through their magistrates and committees assembled in General Court. This remarkable document has been called, and with a certain import truly called, the first written constitution; but it should be remembered that a "constitution" with the peculiar American meaning belonging to the word, was at that time impossible, for the idea now expressed by the word was then undeveloped. It was not a law enacted by the sovereign people, binding those to whom it committed the exercise of power with the sanction essential to positive law; it was a mere rule of conduct prescribed by the sovereign, *i. e.*, the people, through their representatives assembled in General Court, for its own guidance, lasting during pleasure, devoid of all sanctions, and possessed, so far as it purported to control the action of the General Court, of no legal authority.

It did, however, formulate into solemn declaration one of the two essential principles assumed to be axiomatic by the American idea of government, *i. e.*, sovereignty by virtue of the divine will and law resides in the people, who set the bounds and limitations of the power they entrust to officers and magistrates. The other principle, *i. e.*, sovereign power, can only be exercised consistently with civil liberty when delegated by the sovereign to governmental agencies through a permanent law setting the bounds and limitations to its exercise, under sanctions that can be legally enforced, required the lessons of nearly two centuries for its apprehension and acceptance. Doubtless the fundamental orders expressed the views of all the early settlers and defined methods already existing by virtue of a common agreement unformulated, or certainly unrecorded, but the general acceptance of these views, as well as the firm, clear statement of them in the draft of a plan for government, is mainly due to Thomas Hooker. "*Vir solertis et acerrimi judicii*," as described by his contemporary, John Cotton. The well-balanced and fervid intellect of Hooker, his forceful and persuasive character, his firm and reasonable faith, pervaded with a prescient apprehension of the future, well equipped him for the great part he played in influencing the acceptance and directing the early application of a vital principle of the type of free government to be fully revealed during the centuries following.

The first attempt to establish any form of a judicatory proper was confined to local municipal courts. In 1639 each town was authorized to establish a town court, with jurisdiction over parties living in the same town in civil causes not exceeding forty shillings; the court to consist of three, five or seven of their chief inhabitants, to be chosen annually; and sessions to be held once in every two months. The members of this court have occasionally been confounded with the "townsmen" or selectmen. One person might, if found desirable, have been chosen to fill both offices, but the offices were distinct; the appointment and duties of townsmen depended on votes and orders passed by the several towns, in some cases prior to the passage of the fundamental orders, and were not regulated by the General Court until long afterwards. The exercise of all judicial powers, except by these town courts, was retained to the General Court, although those members of the court chosen as "magistrates," and by the provisions of the first fundamental order intended to have "power to administer justice according to the laws here established, and for want thereof according to the rule of the word of God," were from the beginning, and without any specific authorization, allowed, apparently, *virtute officii* an indefinite "magistratical power." All causes continued, as before the passage of the fundamental orders, to be tried by the General Court at a session of the whole court, *i. e.*, of magistrates and deputies, or (as was ordinarily the case) at a session of the magistrates only constituting a particular court; and later (1647) such particular court was authorized to be held by the governor and two other magistrates, or in case of necessity by any three magistrates. The particular court being in effect the General Court sitting for special purposes, under a vote authorizing such session, exercised from time to time other than judicial functions. In 1642 an order was passed contemplating a session of the particular court to be held quarterly, and from this time the particular court assumed more the form of a permanent tribunal, but its essential character was never changed.

At first the General Court consisted of seven magistrates, one of whom presided as governor, and the others chosen two from each town and nine deputies, three chosen from each town. But, as more towns were admitted, the number of magistrates was not increased, so that a town might have no resident magistrate; to remedy this inconvenience the General Court would from time to time appoint a "commis-

sioner," delegating to him for a limited time, and within a particular town, the "magistratical power" belonging to a magistrate. Occasion soon arose for setting up, in places distant from the river towns, an inferior court of limited civil and criminal jurisdiction. To meet such occasion the General Court would appoint an "assistant," or assistants, to a magistrate, who with the magistrate, and sometimes with "commissioners" named for the purpose, might exercise such jurisdiction; in one instance the town was authorized to choose such assistant. In 1661 it was ordered that the General Court should choose assistants as needed in the several plantations, and they were given, within their respective limits, the powers of one magistrate. From the occasional appointment of these commissioners and assistants, to whom by force of necessity some portions of the power of the General Court and its magistrates were temporarily delegated, was developed the "Justice of the Peace."

The peculiar character of probate jurisdiction was recognized by the General Court in 1639. A will "in writing or by word of mouth," was allowed. In the case of testate estates, the townsmen of each town were directed to take an inventory of the estate, to record a copy of the will and the names of the children and legatees of the testator, to keep the same in safe custody, to protect and manage the estate for the benefit of the children or legatees "according to the mind of the testator," and to file the will and inventory with a particular court, "where the same is to be registered." In the case of intestate estates the townsmen were to take an inventory and a particular court was to grant administration, and to "divide the estate to wife (if any be), children or kindred, as in equity they shall see meet," and in case no kindred were found, to administer the property for the benefit of the commonwealth. During the same year (1639) the court provided for a sort of ancillary administration in the case of an estate found to be insolvent; and in 1648, an order of the General Court provided to a limited extent for ancillary administration of estates testate and intestate when portions of the estate were in other of the "United Colonies," *i. e.*, Massachusetts Bay, Plymouth and New Haven. Causes tried by the General Court were disposed of without the aid of a jury; but when tried by the Particular Court, a jury trial seems to have been the rule from the first; the court, however, could, "if they do not conceive the jury to have proceeded according to their evidence," require them to further consider the case, or impanel another jury, or "vary and alter the damages given in by the jury as they should judge most equal and righteous." The court, at their option, impanelled a jury of six or twelve, and the agreement of the majority was sufficient to support a verdict. The early practice was for the same jurors to try all the cases at one session. These proceedings were regulated by a general order in 1644. Appeal to the General Court was allowed in all cases. There seems to have been no rule for the commencement of actions until 1643, when a provisional order was made regulating the issue of process. Criminal law was administered at the will of the General Court. From time to time a crime would be defined and punishments prescribed; but most punishments rested mainly or wholly in discretion. The court being advised in any convenient way of misconduct, determined in each case whether the delinquent had violated any order of court or rule of the Word of God, and apportioned the punishment to the offense. In 1643 the first step was taken towards a more formal prosecution; and it was then ordered that a grand jury of twelve appear yearly at the September General Court, to make presentment of "any misdemeanor they know of in the jurisdiction." And in 1660 the General Court appointed two grand jurors in each town, who were to inquire of misdemeanors in the several towns and make presentment thereof at the sessions of the Particular Court.

The General Court, with its earliest acts, indicated the lines that have directed the Connecticut law of divorce. In 1640 marriage was recognized as a civil contract, within the control of the magistrates; it was not until 1694 that parties could be validly married by a clergyman. In 1655, the General Court ordered a special court to grant a divorce for desertion; in 1657 it granted a divorce for the "sinful and unnatural carriage" of the wife in declining fellowship with her husband; in 1660, for the absence of the husband unheard of for seven years; in 1662, "upon good consideration and solid reason and evidence." Five other divorces were granted by the General Court prior to an order in 1677 defining the causes for which the newly erected court of assistants might grant a bill of divorce.

It would seem that divorce had been previously granted by the Particular Court, although no special authority can be found in the records; at all events the order of 1677 is in the form of a limitation forbidding a bill of divorce to be granted, except for the causes named. This order declared that "no bill of divorce shall be granted but in case of adultery, fraudulent contract, or willful desertion for three years with total neglect of duty, or seven years' providential absence, being not heard of after due enquiry made and certified, such party being counted as legally dead to the other party;" in all which cases a bill of divorce may be granted by the Court of Assistants to the aggrieved party. This order remained on the statute book unchanged in form until after the adoption of the constitution of 1818, and unchanged in substance until 1843. The orders of 1640 and 1643 show that the family was regarded as the foundation of the state; and marriage as a status to be defined and regulated by the state in accordance (like all civil laws) with the rules of God; that the contract of the parties resulted in this status, or "marriage covenant," whose character was determined by the rule of God as declared and applied by the state; and so the General Court possessing the supreme power of the state determined on grounds of public policy the termination of this status. The same legislative function which decides that the "marriage covenant" is a life status, must, in each exceptional case, settle the considerations of policy that may call for an earlier termination. But as the question of policy which is not a judicial question may wholly depend on controverted facts which may best be established through judicial inquiry, the courts are called upon to settle such facts in that class of cases where the state has decided that those facts being established, public policy demands a termination of the status. So the General Court exercising the whole power of the state at first decided in each application for divorce the question of policy; but in 1677, having settled its policy that certain facts existing the marriage covenant ought to be dissolved in all cases where its dissolution is claimed, it referred to a purely judicial tribunal the granting of divorces in those cases, reserving to the General Court all cases where the question of policy cannot be settled by the mere ascertainment of such particular facts,—as was said by the Supreme Court of Errors in 1803—"While they (the General Assembly) referred certain defined cases to the Superior Court, they reserved all other cases, which could not be well defined by law, to their own discretion, to be decided on their own merits, on the principles of general policy" (*Benton v. Benton*, 1 Day, 115). How sparingly this power was used appears from the fact that after the order of 1677 was passed until 1780, only four divorces were granted by the General Court. In authorizing divorces for the causes named in 1677, the General Court scarcely modified the permanent nature of the marriage covenant; for the establishment of these causes implied either an original marriage absolutely void, or the death or what was held equivalent to the death of one of the parties, or a permanent obstruction to the accomplishment of any of the purposes of the marriage covenant. "Fraudulent

contract" required proof of impotence or consanguinity or some fact that rendered the marriage void *ab initio*. "Seven years providential absence being not heard of" was proof of death. "Adultery" proved, was held equivalent to death; this offence was then punished by death, and in the diffuse language of the New Haven Colony laws published in 1656, it is explained that this ground of divorce is given when the proved adulterer keeps out of the jurisdiction so that justice cannot proceed to the execution of the death penalty. "Willful desertion" implied an absolute and persistent "refusing all matrimonial society" as expressed in the New Haven laws, or, as expressed by the General Court in 1657 in granting a divorce to an abandoned husband, an "unworthy, sinful, and unnatural carriage towards her husband disowning him and fellowship with him in that solemn covenant of God between them;" proof of willful desertion must establish a deliberate intent to repudiate every obligation of the marriage covenant actually carried out and persisted in for three years, a time adopted as sufficient to evince the permanency of this practical extinction of the marriage. These views in respect to marriage and divorce outlined in 1640 control the law of to-day; although an unauthorized looseness of practice prevailing, especially from 1849 to 1878,—while "any such misconduct as permanently destroys the happiness of the petitioner and defeats the purpose of the marriage relation" was a statutory ground of divorce,—has induced some popular misapprehension of the existing law.

In 1647 the General Court, by a legislative order, established as the foundation of the law of insolvency the broad principle that "every man should pay his debts with his estate; be it what it will be, either real or personal," of which estate, if insufficient to pay all creditors, each one shall have "a suitable proportion to his debt." Five years before this legislative action was taken a particular court being suspicious that a frequent defendant was not solvent, appointed, of its own motion, trustees to take charge of all his estate, dispose of it for the use of his creditors and account to the court.

A system of land registration was started in 1639; the feudal theory of land tenures was wholly ignored, real and personal property subjected to substantially the same rules of intestacy, and the right and duty of the General Court, as being the state, to divide intestate property in accordance with its views of equity, expressed at first by orders adapted to special cases and subsequently by legislative orders was distinctly affirmed.

In the records of this period it is somewhat difficult to distinguish what are properly legislative orders from orders judicial and executive in their nature. The General Court governed by virtue of a divine commission and in accordance with the rules of the word of God. Power of whatever nature was exercised whenever required by special occasions, and orders of a legislative nature were framed from time to time, usually when suggested by such occasion. These orders were collected, revised and arranged into a "Code of Laws," which was established by the General Court in 1650. This code consisted mainly of such regulations as actual experience had suggested. In the absence of any express law the defect was to be supplied "by the word of God." Two instances will suffice for illustration. "Gaming" was punishable as contrary to the word of God; the code fixed a penalty, but specified only one kind of gaming, that called "shuffle board." In 1656 the General Court specified other games, and declared "what games they judge and condemn as altogether unlawful in the very nature of them," that is, "any other games wherein that great and solemn ordinance of a Lott is expressly and directly abused and profaned." The code specified fourteen offences punishable by death, each justified by the citation of

Scripture texts. In 1672 two persons were tried at the Court of Assistants on a charge of incest. No order stating the degrees within which marriage would be unlawful had been passed. Incest was not a crime under the English common law, nor by any express law of the General Court. The Court of Assistants consulted some of the neighboring ministers as to the application of the law of God; they replied that a person guilty of incest ought to be put to death; the assistants then asked the advice of the General Court, and that court "declared their judgment to be that such persons as are proved to be guilty of incest they ought by the law of God and our laws as now they stand to be put to death." The General Court at the same session introduced a new section into the capital laws, which was a condensation of the law as stated in Lev. xviii., 7, 8, and xx., 11, 12, 14. In 1702 this law was superseded by the adoption of some provisions from an act passed by Massachusetts in 1695.

In 1644 action was taken in connection with the other colonies to give effect to foreign judgments as *prima facie* binding on the parties.

It was provided in 1639 that the orders of a legislative nature should be published by the secretary's providing at the close of each session a copy, and giving directions to the constables of the several towns to publish the same at some public meeting, and to cause them to be written in a book in their several towns. The code of 1650 was published in this manner; the revision of 1672 was printed and that book contained the first printed laws of Connecticut; although New Haven while a separate colony had its laws printed in London in 1656. In issuing this first printed revision of its laws the General Court reaffirms the source of its authority, namely: "Jehovah, the great Law-giver; who hath been pleased to set down a divine platform not only of the moral but also of judicial laws;" and declares that "we have endeavored not only to ground our capital laws upon the word of God, but also all our other laws upon the justice and equity held forth in that word, which is a most perfect rule." A jurisprudence based upon the justice and equity held forth in the Word of God, built up by practical men and administered in substantial accordance with English procedure, must eventually correspond in its main features with English common law.

During the first twenty-five years were planted the seeds from which grew the jurisprudence and judicatory of to-day; and this work was carried on while a wilderness was being prepared for civilized life, roads laid out, dwellings and houses of worship erected, trade and commerce inaugurated, and hostile savages subdued by successful exterminating wars. The population of the infant government was less than one thousand; the number of freemen probably not exceeding one hundred and fifty; it was composed mainly of sturdy yeomen, thoroughly imbued with the spirit of religious and political freedom, which represented the best product of the agitations that culminated in the reign of Charles I., and included a few cultivated but sympathetic leaders. The work accomplished was essentially a work of the people, representing their average intelligence and conscience. The records furnish slight material for distinguishing individuals. From manuscript still existing some personal sketch might be made of Thos. Hooker, of John Haynes, Governor of Massachusetts in 1635 and of Connecticut in 1639; of John Winthrop, Jr., and possibly of others; but, for the most part, the men foremost for wealth, culture or strength of character, such as George Wyllys, Edward Hopkins, William Whiting, Henry Wolcott, William Phelps, William Swayne, John Talcott, Thos. Welles, William Goodwin, John Mason and George Fenwick, can be known only by the brief records of their work. During the great rebellion the eldest son of John Haynes


served with the King, his second son was one of Cromwell's trusted generals; and Fenwick commanded a roundhead regiment; the descendants of nearly all are men known in the history of the nation their fathers so materially helped to found. Roger Ludlow was one of the most able of the founders, and partly because he was an educated lawyer (perhaps the only one) has left an individual mark on legislation more easily traced than that of the others. The Code of 1650 was prepared by him and bears his name. He was evidently specially relied on by the General Court in matters pertaining to law, and on one occasion was, by special order, made moderator of the Particular Court, notwithstanding the governor and deputy governor might be present. The real founders, however, were the little band of free planters, constituting a pure democracy, aided but not controlled by the special gifts of a few.

CHAPTER XXXVIII.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS—*Continued.*

1662-1784.

THE CHARTER—ITS CONSTRUCTION—ERECTING CORPORATIONS, VALE COLLEGE.

HE charter was granted by Charles II., April 23, 1662, and the 9th of October following was "publicly read in audience of the freemen, and declared to belong to them and their successors, and the freemen made choice of Mr. Wyllys, C. John Talcott and L. John Allyn to take the charter into their custody, in behalf of the freemen." (1 Col. Rec., 384.) The grant removed any doubt as to the sufficiency of the title by which the freemen held their lands, gave the stamp of legality to the government they had established, and extended the jurisdiction of that government over the neighboring colony of New Haven.

The charter was accepted by the freemen as a confirmation by the Crown, of their right to carry on within their territorial limits a government—independent so far as it dealt with their internal affairs—on the lines of the "jurisdiction" agreed on by the three river towns in 1637, and outlined in the fundamental orders of 1639. The government authorized by the charter did, in fact, closely correspond with the one it superseded, but it differed in some material particulars, a difference, however, to which the colonists paid slight respect, except when under the pressure of some impending danger of forfeiture of their charter. They maintained from the first that the charter was in the nature of a contract, for which the consideration on their part was the acquirement for the benefit of the Crown of their territory, some by purchase from the natives and the Warwick claimants, and a large part by conquest of the Indian possessors; and the preamble of the charter furnishes a show for this claim. In 1765, in the resolution passed by the House of Representatives, and with concurrence of the Upper House, entered on the records of the General Assembly, declaring the Stamp Act to be both "unprecedented and unconstitutional," this claim is formally set forth, and the rights derived from the charter are declared to be "sacred and indefeasible," and the charter itself, "to stand upon the same basis with

the grand charters and fountains of English liberty." This construction of the charter as a confirming grant by the Crown of that form of self-government already established by the people, was maintained with unvarying persistency, marked by shrewd caution as well as stubborn courage. When James II. proceeded against them by *quo warranto*, they sought successfully to evade a judicial contest hopeless while James was King, and so shrewdly managed their correspondence with Sir Edmund Andros, that while submitting to the inevitable in his seizure of the government, they escaped the charge of voluntary submission, and by the bold act of Capt. Joseph Wadsworth and his associates, retained possession of their charter, so that the action of Andros could validly be treated as usurpation. When Andros fell with the dethronement of James, they quietly ignored the Andros rule of 1687-9, and put in operation the charter government as if there had been no interruption. The governor summoned a special session of the General Court, which at once ordered lists to be made of the persons and estates ratable by law; and, to deal with the discontented or timid who might question the authority of the resurrected charter government, it was ordered that if any person neglect to give in a true account of their persons and estates, the General Court might "rate them will and doom;" that is, "as near as they can come at them by the best inquiry." October 9, 1690, three listers were brought before the General Court, charged with neglecting to make a list for their town. They were all found guilty and fined; one of them, for opposing the constable, was ordered to prison during the pleasure of the court, and one was adjudged to give bond for his good behavior for denying the government in the face of the court. It was doubtless at this time, when the accused questioned the lawfulness of the court that, as reported in Bulkeley's Will and Doom, the moderator, Governor Robert Treat, said: "That the people had put him in, and he had ventured all he had above his shoulders on the account, and therefore he would maintain it."

The colonists' construction of their charter is illustrated in their erection of corporations, and the troubles connected with their law of intestacy. Asserting their claims, so far as their internal affairs were concerned, to the general powers belonging to an independent government, rather than to the limited powers specifically granted to a mere municipal corporation, they exercised, with some fear and trembling, however, the prerogative of granting corporate powers. This was mainly confined to their ecclesiastical societies and school societies, whose *quasi* corporation might be regarded as a mere delegation of powers vested by the charter in the General Court; but they also, by special laws, gave privileges in the nature of corporate powers to particular partnerships for business purposes, such as producing ore by the owners of a bed of iron ore, and established a sort of corporation for improving the navigation of the Connecticut river, with power to collect tonnage from the masters of vessels benefited; in two instances they exercised the royal prerogative without any disguise.

In 1701 the General Court passed an act authorizing certain "reverent ministers of the Gospel" to found and carry on a "Collegiate School." In 1722 the trustees of the school were authorized to have and use a common seal. In 1723 an explanatory act was passed recognizing the school by the name of "Yale College," and modifying some of the provisions of the original act. But in 1745 the General Court in the most formal manner erected the then trustees of the school into a body corporate and politic by the name of "The President and Fellows of Yale College in New Haven," with all the powers ordinarily belonging to such a corporation, including the power to "give and confer all such honours, degrees or lycenses as are usually given in colleges or universities:" and the enacting portions of this act were curi-

ously phrased so that the charter might as far as possible correspond in form with letters patent issued to the grantees under the great seal of the colony, and attested by the hands of its principal officers. In 1763 Edward Doss and others disturbed by the efficient though somewhat arbitrary and autocratic rule of the then president and the alleged injustice of the by-laws, petitioned the General Assembly as founders of the college to appoint visitors and reform abuses—2 Trumbull's History, 327. See also Clapp's Annals. The movement was backed by a considerable feeling of dissatisfaction with the college and the petitioners were represented before the General Court by two of the ablest lawyers of the day—Jared Ingersoll and Samuel W. Johnson. President Clapp argued in behalf of the college with great vigor and made an admirable presentation of the questions of law involved. Both sides assumed that the General Assembly in granting the charter exercised the royal prerogative and so was founder of the college; but President Clapp argued that the common law did not give the right of visitation to the King as founder in that sense where there was an individual founder by virtue of making the first donation; and claimed upon the evidence that the General Assembly was not the founder "*quoad dotationem*." The petition was dismissed, probably, as suggested in Dexter's Yale Biographies, because of the shrewd, if somewhat ungrateful, intimation of President Clapp, that the corporation if beaten would appeal to the King. The General Court did not care to risk their "priceless jewel," as the charter was called, by maintaining such practical construction of charter powers before the Privy Council. Three years later, however, when Yale College applied for more pecuniary aid, the General Court referred the application to a committee, which after an investigation of the college management reported, recommending assistance to the college out of the duty on rum collected at New London and New Haven, and further that it be recommended to the corporation that they revise their laws, print them in English as well as Latin, and lodge a copy in the Secretary's office; reform their methods of government and annually lay their accounts before the General Assembly. The aid was voted in pursuance of the committee's report. A memorial from the college in the following year proves that these recommendations in part at least were complied with; so the practical purposes of a visitation were safely accomplished. The other undisguised exercise of the royal prerogative was followed by disastrous consequences. Connecticut in common with other New England colonies suffered severely from the want of a sufficient currency.

The first issue of bills of credit was authorized in 1709; each issue was accompanied by a special tax to provide for their redemption, and, until about 1735, the issues were within reasonable bounds, and their credit so well maintained that John Read, in urging first on Governor Talcott, and then on the General Assembly, his scheme for a paper currency based on copper coinage, claimed that it was the only colony which "can expect to be favored with a patent from the crown to coin copper in New England." The stress for more currency was so great that many leading citizens hoped for relief through private bills of credit; and with this in view some sixty of the principal inhabitants in May, 1732, obtained from the General Assembly an act of incorporation under the corporate name of "New London Society United for Trade and Commerce," for the general purposes of "promoting and carrying on Trade and Commerce to Great Britain," and his Majesty's islands and plantations in America and elsewhere, and "for encouraging the fishery, etc., as well for the common good as their own private interests." In August the corporation voted to issue £30,000 in bills of credit, similar in appearance to the colony bills. By the following February about £15,000 of these bills had been issued. These operations, at

first popular, soon caused a great disturbance of business, and seriously frightened the authorities. February 9, 1732-3, Governor Talcott issued a writ in the nature of a *quo warranto*, summoning the corporation to appear before a special session of the General Assembly on the 15th inst. The corporation appeared, and a hearing was had; its counsel took exception to the jurisdiction of the court, and waived it, and pleaded in justification that the bills emitted by the society were not of the nature and tenor of the bills of the Province, but only of bills of exchange which they had a natural right to issue. The General Court decided: 1. It is unlawful for any society or person, without authority of this government, to emit bills of credit of the tenor of the bills of credit of this colony. 2. The bills emitted by the New London Society are of the tenor of the bills of credit of this colony, and "are no ways agreeable to bills of exchange;" and thereupon the court passed a law making the issue of such bills of credit punishable, as forgery and counterfeiting were punished. And the court further declared that, inasmuch as the charter required the members to furnish a capital stock, and as the members had put in nothing but mortgages to make this stock, the New London Society, by their mismanagement, had forfeited their charter; and thereupon the court passed a law repealing the act of the preceding May by which the charter had been granted. The court also passed a law for a special issue of colony bills of credit to be used under the conditions provided for drawing in the bills issued by the New London Society. Notwithstanding the disastrous results of this experiment, a somewhat similar scheme for issue of private currency on a much larger scale was started in Massachusetts in 1739, but was met by the vigorous opposition of Governor Belcher, and finally suppressed through the extension to the colonies of an act of Parliament imposing a severe liability on each member of such a society. In 1733 the former corporators of the New London Society applied for a revival of their charter, "with such restrictions as may be consistent with the peace and safety of the government." On this occasion the General Court discussed their authority to establish such a "company of merchants," and resolved that, inasmuch as "all companies of merchants are made at home by letters from the King," it is at least very doubtful whether we have authority to make such a society, and "hazardous for this government to presume upon it;" and furthermore, that it "is not for the peace and health of the government" to create such a society. While the general power to erect corporations was still asserted, it was afterwards much more cautiously used, except in the case of the charter of Yale College in 1745.

The troubles connected with the intestacy law still more strongly illustrate the persistency with which the colonists maintained their construction of the charter. From the beginning the General Court, as well as the Particular Court and Court of Assistants in the exercise of probate jurisdiction, had divided an intestate estate to wife, children or kindred "as in equity they shall see meet." The practice was to divide real as well as personal property equally between the children, male and female; this practice was made compulsory by a statute passed in 1699, giving, however, a double portion to the eldest son. General Wait Winthrop died about 1716, possessed of considerable real estate, and leaving two children, a son and a daughter. The son, John Winthrop, a Justice of the Peace for New London county, but resident of England, after the failure of his various attempts to injure the colony, claimed the whole of the real estate left by his father on the ground that by the common law of England the land descended to him, and that the act of 1699 was in violation of that law, and void. After much litigation between him and his sister's husband, Thomas Lechemere, the right of Mrs. Lechemere to a distributive portion of the real estate

was established. Winthrop then appealed to the king in council, and, in 1727, an order was passed vacating the various judgments rendered by the colonial courts in Lechemere's favor, and declaring the intestacy act of 1699 null and void. This declaration was made in a private suit in which the colony was not represented. The General Assembly restored the land in question to Winthrop, but did not repeal their intestacy act; and an English attorney, consulted in the interest of Connecticut, writes in 1738, "I must own my surprise that the courts in Connecticut would go on to make determinations upon the foundation of their act, after they had notice of Winthrop's order." What was really done, as appears from a letter of Governor Talcott, under date of July 1, 1730, was this: when heirs were of full age and agreed to a division of the land in accordance with the colony law, the estate would be settled; but, in other cases, the settlement of estates was kept open until the colony's efforts to maintain the validity of the law should succeed or prove to be hopeless. In 1737 the king in council, in the case of Phillips and Savage, sustained the validity of a similar act passed by the Massachusetts Bay in 1692. This decision gave renewed hope to Connecticut. Although, upon the argument in the trial of Phillips and Savage, distinctions were drawn between that case and Winthrop *v.* Lechemere, cited against the Massachusetts law, there was a most hopeful significance in the declaration of Lord Chancellor Hardwicke, a member of the Council, who, as Attorney-General Yorke had acted for Winthrop, that as counsel for Mr. Winthrop in the former case, he had "offered all that he could for his client to get the Connecticut act repealed and the orders reversed, that though he had prevailed therein for his client, yet with very great deference to those lords who judged in that case, he was not satisfied in his own private opinion, with that determination in Winthrop's case."

In March, 1732-33, the Superior Court, in the case of Samuel Clark *v.* Thomas Tousey and Hannah, his wife, affirmed a probate decree, passed before notice of the decision in Winthrop's case had been received, by which the land of an intestate had been divided among his children, male and female, in accordance with the law of 1699. From this judgment Clark took an appeal to the King in Council. The main question involved was the validity of the Connecticut law, held to be invalid in Winthrop *v.* Lechemere. The General Assembly appropriated £500 to secure a proper presentation in support of their law, and directed their agent at London to employ attorneys and counsel on behalf of the colony; the counsel suggested by the attorney were Mr. Strange, afterwards Sir John Strange, Master of the Rolls (who had been counsel for Savage in Phillips *v.* Savage), and Mr. Murray, afterwards Lord Mansfield. Governor Talcott and Jonathan Law had prepared for their agent thorough and able arguments. Specific instructions to the attorney employed were prepared by John Read, containing a masterly exposition of what he called "The Great Question, Whether ye Common Law of England Extends to Connecticut;" his contention is maintained by a convincing argument based on the reason of the thing, as shown by the history of the common law, as well as on the official opinion given to the Lords Commissioners for Trade by Lord Chancellors Talbott and Hardwicke, while holding the offices of attorney and solicitor-general. John Read was born in Fairfield, June 29, 1679-80, and a brother-in-law of Governor Talcott; he graduated at Harvard in 1697, studied theology and preached in towns in Fairfield and Hartford counties, but soon commenced the study of law, and when, in 1708, the General Court provided for the formal appointment of attorneys as officers of the court, Read was one of the first admitted; he was the Colony Queen's attorney, 1712-16; deputy for Norwalk, 1715-17; a commissioner to settle the boundary with New

York, 1719, and represented Connecticut in the inter-colonial commission relative to bills of credit, 1720; about 1722 he removed to Boston, and was afterwards attorney-general and in the Council of the Bay; easily the most eminent lawyer of New England, described as "the pride of the bar, the light of the law, and chief among the wise, witty and eloquent," he was ever ready to serve his native province, where his laurels were first won. In 1795 the appeal in *Clark v. Tousey* was decided in favor of the defendants and dismissed. The final judgment did not turn on the main issue in the case, but its practical effect was to establish the colony's claim. Thus after seventeen years of uncertainty in the settlement of intestate estates, and unceasing efforts on the part of Governor Talcott and his associates in the government to remedy the error committed in *Winthrop v. Lechemere*, the "great question" was settled in favor of the colony. The original and unvarying claim that the freemen of Connecticut were possessed of a government based on the assent of the people, and authorized to exercise the powers of government "not contrary to the law of England"—that is, as put by Governor Law, not contrary to the laws of England which are "established or made for the Plantations," and so authorized to make their own statute and common law, is the keynote to the judicial history of the colony, and was also the efficient source of those political opinions that inevitably led to independence. When John Read argued, in 1743, "God and nature have given unto mankind, or human society, a power of assent and dissent to the laws by which they are to be governed (those only excepted which proceed from absolute sovereignty) and this is the known privilege of Englishmen, to be governed by laws to which they have, in some form or other, given their consent," he stated the ground which controlled the pioneers of Connecticut in framing their own charter, in 1639, as well as the General Assembly in adopting their declaration of rights in 1774, and in assuming the powers of an independent sovereignty in 1775.

CHAPTER XXXIX.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS—*Continued.*

JUDICIAL TREATMENT OF WITCHCRAFT—GROWTH OF COLONIAL COMMON LAW— DIVERGENCE FROM ENGLISH COMMON LAW.

IT is impossible within the limits of this article to follow in detail the development of the Connecticut system from the granting of her charter to the establishment of her independence; a fairly adequate notion of its spirit, scope, and general drift may be gained by considering how the moribund law of witchcraft was dealt with; the nature of the colonial common law; the origin of equity jurisdiction; and the laws by which the General Court or Assembly, the possessor of all power, delegated a considerable portion of the administration of justice to a regular judiciary.

By the law of 1642, being a witch, that is, having or consulting with a familiar spirit, was a crime punishable by death. There were several cases of conviction under this law, but I find satisfactory evidence of very few executions; the magistrates were less willing to punish than the juries were to convict. About the time of the Salem trials in the Bay, where one victim suffered death by *peine forte*

et dure and nineteen were executed for witchcraft, occurred the Fairfield trials. The General Assembly ordered a special court to sit at Fairfield on September 19, 1692, for trial of persons suspected of witchcraft. The grand jury found a true bill against Mercy Disborough and also against Elizabeth Clawson. The two cases were tried together by one petit jury. The statement of the crime in the indictment is curious: "For that on the 25th of April, 1692, etc., and on sundry other times she hath by the instigation and help of the devil, in a preternatural way, afflicted and done harm to the bodies and estates of sundry of their majesties' subjects or to some of them." Both the accused floated on subjection to the water ordeal, *i.e.*, being cast into water with the thumbs tied to opposite toes; this was testified against them as evidence of guilt; there was also evidence of excrescences on their persons "not common to women," and much of the usual testimony in such trials. The jury did not agree, and the Special Court took an adjournment until October 28th in order to take the direction of the General Court, and advised the Queen's attorneys to obtain further evidence in the meantime. On re-assembling in October, the General Court having ordered "that the jury be called together, and that they make a verdict upon the case," a verdict of "not guilty" was returned in the case of Elizabeth Clawson, and a verdict of "guilty" in the case of Mercy Disborough. Upon being sent to a second consideration of the Disborough case, the jury returned the same verdict, which was then approved by the court, and sentence of death pronounced by the governor. The Court consisted of the governor, deputy-governor, and six of the twelve assistants at the session in September, and five assistants at the October session; three of the assistants present at the first court were not present at the second, and two of the assistants present at the second were not present at the first. Immediately three assistants reprieved the prisoner until the General Court might have cognizance of the cause. They were, William Pitkin, present at the September but not at the October session, and Samuel Willis and Nathaniel Stanley, who were not present at either session. The report to the General Court, evidently drawn by William Pitkin, giving their reasons for this reprieve, is a notable document. The reasons were, first: The verdict was void, because a juror left the panel during the trial and another juror was sworn in his place. Pitkin argues this with great force and clearness, and in stating the principle, maintained by the weight of authority to-day, that in a capital case the assent of the prisoner cannot make valid a trial without a full panel, says, "Due form of law is that alone wherein the validity of verdicts and judgments in such cases stands, and if a real and apparent murderer be condemned and executed out of due form of law, it is indictable against them that do it, for in such case the law is superseded by arbitrary doings. What the court accepts and the prisoner accepts differing from the law, is nothing; what the law admits is all in the case." Second, because the verdict was against the evidence. Pitkin claims that sufficient convictive evidence of witchcraft must be

"1st. Confession. (This there was none of.) 2nd. Two good witnesses, proving some act or acts done by the person, which could not be but by the help of the devil; . . . as for the common things of spectral evidence, ill events after quarrels or threats, teates, water tryall, and the like, with suspicious words, they are all discarded and some of them abominated by the most judicious as to be convictive of witchcraft; and (referring to events occurring at Salem, Mass.,) the miserable toyl they are in at the Bay for adhering to these last-mentioned litigious things is warning enough; those that will make witchcraft of such things will make hanging work apace—and we are informed of no other but such as these brought against this woman."

The General Court had submitted the evidence taken against Disborough and Clawson to the ministers for their opinion, and their report, signed by Joseph

Eliot and Timothy Woodbridge, and approved by all the ministers, is significant. They say :—

1. "The endeavor of conviction of witchcraft by swimming is unlawful and sinful, and therefore it cannot afford any evidence.

2. "Unusual excrescences found upon their bodies ought not to be advanced as evidence against them without the approbation of some able physicians.

3. "Respecting the evidence of the afflicted maid (the witness claimed to have been bewitched) we find some things testified carrying suspicion of her counterfeiting; others which plainly intimate her trouble from the mother (*i. e.*, hysteria), which, improved by craft may produce the most of those strange and unusual effects affirmed by her; and of those things that by some may be thought to be diabolical as effects of witchcraft we apprehend her applying of them to these persons merely from the appearance of their spectres to her to be very uncertain and fallible from the easy deception of her senses and subtle devices of the devil, wherefore we cannot think her a sufficient witness; yet we think that her affliction being something strange, it well deserves a further inquiry.

4. "As to the other strange accidents—as the dying of cattle, etc., we apprehend the applying of them to these women as matters of witchcraft to be upon very slender and uncertain grounds."*

Mercy Disborough was not executed, and I believe this was the last trial for witchcraft in Connecticut. The records contain no order repealing the law making witchcraft a crime, but the law is omitted from the revision of public acts published in 1750. The history of this case illustrates the colonial procedure and common law at an early formative period; also the custom, induced partly by the fact that the rules of ethics set forth in the Bible were accepted as the foundation of their jurisprudence, and partly because many of the best trained and most thoughtful minds were to be found among the clergy, of referring questions of legal doubt to the ministers; indeed, the ministers furnished some of the most eminent public men and lawyers; notably in the case of Governor Salstonstall, and still more so in the case of John Read.

A belief in witchcraft had always existed; it was entertained by Coke, Bacon, Hale and even Blackstone; its practice was a crime punishable by death under the law of Moses, the law of the Twelve Tables (despoiling crops by enchantment "*qui fruges excantasset*," Tab. VIII. 8.), and the Roman and civil law, was a misdemeanor at English common law and made a felony without benefit of clergy by 33 Henry VIII., c. 8, and 5 Eliz., c. 16, and the yet more severe statute of 1 Jas. I., c. 12, and prosecution of the crime was not forbidden until 1736, 9 Geo. II., c. 5. There were numerous convictions and executions during the seventeenth century in different parts of England; in Lancashire seventeen persons were condemned on the evidence of one boy; in the trial of the Suffolk witches (1665) the judge was Sir Matthew Hale, and the medical expert Sir Thomas Browne. As early as 1584, when the superstition was exposed by the quiet scholar Reginald Scott, in "*The Discoveries of Witchcraft*," his book was burned by order of King James I.; and when as late as 1691 Balthazar Bekker, in "*The World Bewitched*," attacked the popular belief, the Dutch Synod deposed him from his office of preacher. Remembering all this, it is not surprising that witches were tried, convicted and put to death in New England; and the manner in which the waning superstition was dealt with by Connecticut lawyers and ministers is the more significant of that robust common-sense, rejection of superstition, political and religious, and fearless acceptance of the ethical

* For an opportunity to examine the original records of this Special Court, I am indebted to the courtesy of Dr. Charles J. Hoadley, who is now their possessor.

mandates of the great Law-giver, which influenced the growth of their jurisprudence and stamped it with an unmistakable individuality.

The common law of England, as such, has never had the force of law in Connecticut. The contention of the colonists that the common law did not extend to the dependencies of the British Crown, unless made applicable by some law of England, or adopted by the local legislative authority, was practically sustained by *Clark v. Tousey*, and by the opinion of Talbott and Hardwicke, and such seems also to have been the opinion of Blackstone. It was not so made applicable by the charter of Charles the Second, and, unlike many of the other colonies, Connecticut never adopted that law by legislation; in 1698 the governor and council were requested to consider the preparation of a bill for "direction and limitation of the laws of England, how far to be in force here," but no report was made and the subject never again agitated.

The colony of Plymouth in their "General Fundamentals," adopted "the good and equitable laws of our nation, suitable for us in matters which are of a civil nature (as by the court here hath been accustomed) wherein we have no particular law of our own." In 1700 the colony of Rhode Island passed an act "putting in force the laws of England in all cases where no particular law of this colony hath provided a remedy" (Acts and Laws of the Colony of Rhode Island, 1719, p. 45), and so in the Bay and other colonies, the people, as stated by John Read in 1738, "by referring themselves to the law of England, where they have none of their own, they have made some of the laws of England to be their own laws; but this government (Connecticut) have not referred themselves to the law of England, but to the law of God, where they have not express law of their own." This reference to the law of God, as the foundation of those rules of jurisprudence which the courts administer in case of the defect of an express law of the General Court in any particular case, was contained in Ludlow's Code of 1650, and as expressed in the revision of 1750, *i. e.*, "in case of the defect of such law (*i. e.*, 'some express law of this colony') in any particular case, by some clear and plain rule warranted by the word of God"—remained on the statute book until 1784. An existing common law of the state was then recognized, and the revision of 1784, in describing the law binding on the courts, dropped the phrases, "some express law established by the General Court" and "some rule warranted by the word of God," and used in place of both the phrase, "the laws of this state."

The divergence of the colonial common law from that of England is marked in important particulars. The highly technical system, based on feudal land tenures, was looked upon as the foundation of the English common law. That whole system was substantially rejected, and one adapted to the wants of the people and based on common sense was adopted. In England the intricacies of special pleading not only controlled the procedure, but influenced the substantive law and hampered its healthy and sound development; while the common-law actions were recognized in the colony, the forms were marvellously simplified and some of the useless fictions were never accepted. Most notably was this true in the action of ejectment; all the cumbrous machinery and fiction of the common-law actions were discarded for one form of action, setting forth in the declaration by plain, direct statement the land in question, the seizin of the plaintiff and the unlawful disseizin by the defendant. By the adoption of the new action of book-debt, at the founding of the colony, a large portion of the prevailing controversies were tried under a procedure of the utmost simplicity by which the parties themselves were allowed to testify.

The procedure in criminal matters was *sui generis*. Indictment by grand jury

developed on lines different from the English practice. Prosecutions were not entrusted to aggrieved parties, but solely to public officers. Complaints for smaller offences were made by grand jurors appointed by the towns; and the general control of all criminal prosecutions was entrusted to "King's Attorneys" appointed by the courts, and exercising, each within his jurisdiction, the powers commonly belonging to an attorney-general. The King's Attorney could file a complaint or information in any court having criminal jurisdiction, and did occasionally file informations in the General Court or Assembly. Such officer, possessing substantially the same powers still exists under the name of State's Attorney; and most of his present powers are not defined by statute, but by the colonial and state common law witnessed by the custom and judgments of courts for the past two centuries. The functions of a grand jury were practically confined to capital cases; for the prosecution of all other crimes, an information filed by the King's Attorney was sufficient.

Not only was the English practice of committing prosecutions to private persons discarded, but the principle was adopted of intrusting the public prosecutors with inquisitorial powers for the purpose of detecting crime, of conducting the preliminary investigation and preparing the evidence. The magistrates early assumed the duty and power of investigating crime upon suspicion and examining the case and testimonies, and in 1663 this course was approved by the General Assembly, and the respective assistants were authorized for the future to act as aforesaid. The first record of the appointment of a Colony or King's Attorney was in 1662, and was made for a single term of court; but in 1704 the appointment of such officer in each county instead of one for the whole colony was authorized, and the attorney was directed to prosecute all criminal offenders, "and to do all other things necessary or convenient as an attorney to suppress vice and immorality." The grand jurors in the several towns were, by their oath of office, required to make diligent search for, as well as to present all crimes; in 1731 they were ordered to meet semi-annually, with other town officers, to advise and to "use their joint interest" in suppressing immorality, and for the due execution of all laws—and in 1750 "to enable grand jurors more effectually to detect breaches of law," they were directed to meet in each town once in three months, and were empowered at such meeting to summon and compel the attendance and testimony of witnesses "touching such delinquency as they are enquiring after." The statute of 1750, with slight changes, is still in force; the principle early adopted by the colony of intrusting to responsible public officers inquisitorial powers essential to the discovery of crime has proved most useful in the enforcement of law; it is still ignored by the common law of England, although recognized to some extent in the Code of Criminal Procedure for India, enacted by Parliament in 1882. Occasional reference to the "common law" is found in the records of the General Court; sometimes the colonial common law is evidently intended, but the care with which any general recognition of the English common law is avoided is marked.

In 1698 an order authorized any justice of the peace "to have power for the enquiry and removing of forcible entries and detainers, therein to proceed according to the rules and methods in such case provided by the laws of England," thus adopting the statutes of Henry VI. and Elizabeth, and the procedure under them. This order appeared in the revision of 1702, but was repealed in October, 1703. The repeal (from motives of policy) was not printed; but the law repealed was dropped when the revision was reprinted in 1715. In 1726 an act concerning Forcible Entry and Detainer was passed, which, in its main features, is still in force; but the procedure under it is, as was said in *Dutton v. Tracy* (4 Conn. 92), "appropriate to ourselves, and not

consonant to that of Westminster Hall." Having in 1698 approved a form of oath for justices, by which they were sworn to dispense justice "according to the commission given," the General Court was careful, in 1703, to declare that by the term "commission" was meant the "laws of this colony," "and that the justices shall take the laws of this colony for their commission in their administration of justice."

We have seen that incest was punished as a crime under the colony common law; the records give many instances of punishments for minor offences upon the same ground. Perhaps the only instance where there was an apparent appeal to the English common law is the case of Danl. Gard, in 1712. The jury had returned a special verdict, leaving to the discretion of the court whether the accused is guilty of murder or manslaughter. The judges asked the General Assembly whether they ought to determine this point by the rules of the common law; to which the Assembly replied that the judges may in the case proposed determine the same by the rules of the common law. It is not clear what was intended by this advice. The real difficulty was in the law of 1642, defining murder—whether all willful killing, not in necessary defense of person or property, was not murder. In fact the judges did not inflict the penalty for murder, nor that provided by the English common law for manslaughter, but did impose a penalty customary in the colony, where the punishment of a serious offence was not prescribed by statute. In 1719, the General Court by formal enactment prescribed a punishment for "the crime known by the laws of England by the name of manslaughter;" by force of this act the common-law distinctions between murder and manslaughter were adopted; but manslaughter was treated as an offence analogous to misdemeanor rather than felony. The primary technical distinction between felonies and misdemeanors was never in force as law. The intention of the Legislature in giving the advice in Gard's case is illustrated in the case of Barney, who in 1743 had pleaded guilty to a charge of mayhem; again the judges applied to the General Assembly for advice as to punishment, there being no special provision in any colony law. The Assembly advised them to impose such punishment "as to justice appertains according to their best skill and judgment." In 1744 the Assembly prescribed the penalty of death for certain kinds of mayhem within the definitions in the Coventry Act. Notwithstanding the persistent refusal to recognize the common law of England as in force in the colony, the main features of that law were incorporated into the colonial law. Such result followed naturally from several causes. In the beginning the general outlines of English procedure were followed in enforcing the ordinary rights of action. Constant reference to English law in illustration of the legal rights involved was the consequence. With the opening of the eighteenth century the colony began to produce native lawyers familiar with the limited literature of the reports and treatises at that time in print. Read, Law, the Pitkins and others united rare ability with a thorough knowledge of English law. In their arguments before the courts English precedents were freely cited; and although not accepted as binding authority, the principles illustrated influenced results and helped to mould the growing law. From time to time the colony enacted laws corresponding more or less with English statutes. In 1650 a law against fraudulent conveyances was adopted, and in 1702 an act was passed for the same purpose, more like the statute of 13 Eliz. In 1685, an act limited the right of entry on land, and in 1734 fixed the times for bringing actions for breach of contract and for trespass; these acts were derived from the Statute of Limitations, 21 James 1st. In 1650, "debts due upon bill or other specialty" were made negotiable; this act seems to have anticipated by more than fifty years the English legislation of 9 and 10 William III., and 3 and 4 Ann. In 1753, an act made the receiver

of stolen goods liable as principal, an improvement on 3 and 4 W. & M. and 5th Anne, and establishing a principle followed in part by 10 George III. The same year some provisions of 9 and 10 Wm. III, authorizing arbitration by rule of court were adopted; also of 8 and 9 Wm. III, relating to survival of actions. In 1756 a law was passed against bribery in elections, adopted from 7 Wm. III and 2, 9, and 16 George II. In 1757, the common-law practice of impressment of seamen was authorized to be employed in securing soldiers. In 1759 an action of account between joint tenants was authorized, following 4 Ann, c. 16. In 1771 a statute of frauds and perjuries was passed, adapted from 29 Charles II. Such enactment in whole or in part of English statutes, some of which were the subject of almost unlimited litigation, inevitably led to treating as authority the cases concerned with the construction of those statutes.

The common law is more than a mass of customs and practice of courts recognized by a line of precedents. It has been broadly described as "the universal law of the realm which is supposed to have a principle for every possible case." In this sense the common law of England comprises those rules of ethics accepted by the courts at Westminster as the foundation of jurisprudence, and applicable to every case not controlled by some express law. A "common law" of such nature, by whatever name it may be called, must prevail in every country where the science of law is acknowledged and administered. So only can any *corpus juris* be a living body, as distinguished from a lifeless form incapable of growth. When therefore the founders of Connecticut referred to the Word of God for the determination of those rights undetermined by any express law, they adopted as the basis of their jurisprudence those rules of ethics that rest upon the highest authority. They appealed not to the letter of that Word, but to the "justice and equity" held forth therein, to those clear rules "warranted by the Word of God." This was in effect the same foundation as that of the English law and of the Roman law; it was the basis of all law. In the application of such rules, English cases where similar rules had been applied were naturally consulted, and the more frequently as the administration of justice fell more exclusively into the hands of trained lawyers. But so late as 1697, the clergy resident in Hartford were added to the committee appointed to revise the laws. Thus the common law that grew up, became assimilated to that of England in principle, although developed on independent lines. Such origin of the common law of the state is indicated by Chief Judge Jesse Root in the interesting though somewhat florid introduction to his reports; and the manner in which English authorities were marshaled and analyzed, not as binding precedents, but as valuable illustrations of the law, is shown in the case of *Holmes v. Williams*, decided by the Supreme Court of Errors in 1795 (1 Root, 335); the Court treats the question at issue—whether a certain limitation is void as tending to create a perpetuity—as one to be settled by sound reason as well as precedent, and after a careful review of English cases, it notes that in Great Britain "the judges are so hedged in and fettered with technical rules, as to be obliged in some instances on questions of this sort, to decide contrary to the intent of the testator, and to what they think is sound sense," and reaches the conclusion announced "on carefully attending to the authorities on this subject in Great Britain, and their applicability in this state, as well as the plain construction of this will apart from all authorities."


Immediately after the treaty of 1783, acknowledging the independence of the state, the General Assembly (May, 1784) enacted that the judges of the Superior Court (the Supreme Appellate Court for the trial of causes) and of the Supreme Court of Errors (the court of last resort for the settlement of questions of law), in all matters

of law by them decided, shall reduce to writing their opinion, with the reasons thereof, that the same shall be kept on file, and that "thereby a foundation be laid for a more perfect and permanent system of common law in this state." The first act of sovereignty, after the complete accomplishment of independence, was the recognition of a home-grown common law evolved during one hundred and fifty years from the principles laid down by the first free planters, and the decree that the decisions of the highest courts should be a foundation for the extension and perfection of that law.

CHAPTER XL.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS—*Continued.*

ORIGIN AND GROWTH OF EQUITY JURISPRUDENCE— EVOLUTION OF SEPARATE JUDICIARY.

HE General Court, or Assembly, did not delegate any of its equity jurisdiction to the regular courts until 1773, when a law was passed authorizing suits for relief in equity, where the value of the matter in demand does not exceed £20, to be brought to the County Courts, and where it does not exceed £100 to be brought to the Superior Court; by amendment, in 1774, the jurisdiction of the County Court was increased to £100, and that of the Superior Court to £400. The operation of the act was limited to three years; in 1776 the act was continued in force until 1778, and in that year an act, whose operation was unlimited in time, gave equity jurisdiction to County Courts to the extent of £200, and to the Superior Court to the extent of £800. By the revision of 1784 the equity jurisdiction of the County Court was fixed at £100, and jurisdiction given to the Superior Court, in all cases where the matter in demand exceeded that sum, the General Court, however, retaining a concurrent jurisdiction in all cases where the value of the matter in demand exceeds £1600. Prior to 1773 all relief in equity was administered by the General Court; and the fact that original and appellate jurisdiction in every possible form of litigation was continually exercised by this court possessing all sovereign power, legislative and executive, as well as judicial, must be kept in mind in order to apprehend the reason of some things peculiar to Connecticut law. It accounts, in part, for the tendency to cut through the technicalities that sometimes obstruct the application of a legal truth.

This Supreme Court was in a sense bound by no law, for it was in every way a law unto itself. No judgment was absolutely final, for the General Assembly did not hesitate to reverse even the final judgment of a prior Assembly. Its legislative duties occupied but a small part of its time; for instance, the record for the year 1770 shows that the General Assembly as a legislature enacted fifteen laws; as a court acted on one hundred and sixty-four causes, exercising an unlimited jurisdiction, original and appellate, at law and in equity; and as an executive appointed five hundred and ninety officers. It is evident that an equity jurisdiction administered exclusively by such a court for nearly a century and a half must rest on a very broad foundation. The Chancellor was not merely keeper of the King's conscience; he was the King himself. It was this broad jurisdiction which was finally vested in

the Superior Court: "All suits for relief in equity where remedy is not to be had at law shall be brought to the court in the same manner by petition or memorial as such matters have heretofore been brought before the General Assembly," and the court shall proceed to hear "by themselves or a committee and finally determine the same according to the rules of equity," and are authorized to "enforce such their sentence and decree according to the usage and custom of the General Assembly in like case." And so the courts took up an equity jurisdiction and procedure, defined and established by the custom and usage of the General Assembly. The practice of the courts developed settled rules of procedure and definitions of jurisdiction, drawing material aid, as in the case of actions at law, from English decisions; but the procedure was widely different from that of English Chancery, involving an oral examination of witnesses by the judge and great simplicity in pleading, and the jurisdiction rested on a broader foundation.

The elimination of a separate judiciary from the concentrated power of the General Court was a slow process. A limited probate jurisdiction was exercised by the Particular Court in 1639, was delegated to the Court of Assistants after its establishment, and vested in the County Court in 1666. In 1695 the County Court as a distinct Court of Probate, was given "power to act in all matters proper for a prerogative court." In 1719 a Probate Court for a few adjoining towns was established; subsequently the colony was divided into several districts with a separate Probate Court for each district; a system which still continues, and has been found by long and varied experience, notwithstanding some serious drawbacks, to furnish the most speedy, equitable and inexpensive method for the settlement of estates that has yet been devised. The Particular Court as a branch of the General Court continued until after the acceptance of the charter; then [in 1666] a more formal judiciary was established. Counties were designated and County Courts established with a somewhat undefined jurisdiction; they were to be held by three assistants, or at least one assistant and two commissioners (local officers appointed by the General Court with the "magistratical power" of assistants). Special courts, however, called "County Courts" were held before counties were established; the designation of counties being for the purpose of defining the territorial jurisdiction of the courts. The twelve "assistants" prescribed by the charter were constituted a court called the "Court of Assistants," with a general appellate jurisdiction and original jurisdiction of capital crimes; it was made a court of admiralty in 1681. During his rule, 1687-9, Sir Edmund Andross issued commissions to justices of the peace with the common-law powers of that officer; upon the fall of Andross all his laws were treated as inoperative, and at the first meeting of the General Court "commissioners" were appointed as usual; they were, however, for the first time called "commissioners or justices of the peace;" in 1697 the "justice of the peace" was formally recognized; his power, however, was not that of a common-law justice, but only "to act according to commission given by this court and the laws of this colony."

In 1711 the necessity of a separate judiciary was further recognized by the establishment in place of the court of assistants of "a Superior Court of Judicature over this Colony." This court consisted of a chief judge and four associate judges, and was the first court (except the local town courts) whose members were not *ex officio* judges by reason of their membership of the General Court, or of exercising, by special delegation, the magistratical power of members of that court. It is to be noted, however, that the five judges of the Superior Court first appointed were all members of the General Court. In 1740 the Superior Court was authorized to issue the writ of prohibition; with this exception the General Court seems to have exclu-

sively exercised the power pertaining to prerogative writs. The Superior Court in 1788 issued a writ of mandamus, but the report indicates that this was the first time the power had been exercised (Strong's case, Kirby, 345); subsequently the court assumed jurisdiction in all prerogative writs, no statute on the subject being passed until 1821. The revision of 1750 set out the scheme of judicature in detail: 1. The General Court or Assembly possessed of absolute power, and exercising at will a jurisdiction original and appellate in every matter. 2. A Superior Court of Judicature, with unlimited appellate jurisdiction in all matters, and original jurisdiction in all pleas of the Crown that relate to life, limb or banishment, and also of divorce. 3. A County Court with a general jurisdiction in all civil causes, and in criminal causes, except those relating to life, limb and banishment. 4. A Probate Court in each probate district. 5. Justices of the Peace, with a limited jurisdiction in minor civil and criminal causes. All judges and justices to be appointed by and removed at the pleasure of the General Assembly. This scheme remained substantially unchanged until 1784, when the General Court made more concessions to the demand for a separate and independent judiciary, which was stimulated by the political convictions formed during the discussions and agitations of the Revolution. The General Court then surrendered its exclusive power in matters of equity and error by delegating equity jurisdiction to the Superior and County Courts, and by the establishment of the Supreme Court of Errors, as a court of dernier resort in all matters wherein the rules of law or principles of equity have been erroneously or mistakenly adjudged. It was also provided that no executive officer or member of the General Court or Assembly should hold the office of Judge of the Superior Court. The permanent and effectual independence of the judiciary was, however, impracticable, so long as the people maintained a government wherein all sovereign power unlimited, and therefore absolute, was vested in a "General Court or Assembly."

CHAPTER XLI.

CONNECTICUT—THE ORIGIN OF HER COURTS AND LAWS—*Continued.*

1784-1818.

FROM INDEPENDENCE TO A CONSTITUTION—PIONEERS IN LEGAL LITERATURE—THE FIRST AMERICAN LAW SCHOOL.



THE thirty-four years from the close of the Revolution to the adoption of the Constitution were marked by no material change in the organization of courts except the act of 1806, by which the number of Superior Court judges was increased to nine, and the Supreme Court of Errors, instead of being held by the governor, lieutenant-governor and council, consisted of five at least of the Superior Court judges; this act freed the court of last resort from legislative and executive influences; henceforth no judge could be a member of the General Court. The activity, however, displayed in developing the common law and in the general field of jurisprudence, was noteworthy. The Assembly of May, 1784, had required the opinions of the judges upon questions of law to be reduced to writing and kept on file in order that the

cases might be "fully reported." Accordingly Ephraim Kirby prepared a volume of reports from notes taken for his own use, which was published in 1789. This book included reports of cases in the Superior Court from 1785 to May, 1788, and some cases in the Supreme Court of Errors. Colonel Ephraim Kirby was born in Litchfield, February 23, 1757, was an officer in the Revolution, acquired eminence in the practice of law and during fourteen years of service in the State Legislature, and in 1804 was appointed, by Jefferson, judge in the newly-organized territory of Orleans; he died October 2, 1804, at forty-seven years of age, while on his way to New Orleans. Kirby has the unique honor of being the first American reporter, as "Kirby's Reports" is the first collection of cases adjudged and published in the new world. [The next year, 1790, appeared the first volume of Dallas' Penn. Reports.] The two volumes of Root's reports contain decisions in the Superior Court and Supreme Court of Errors from July 1789, to January, 1798, and a collection of earlier cases; many of the cases reported were tried while Root presided as chief judge of the Superior Court. The five volumes of Day's Reports contain the decisions of the Supreme Court of Errors from 1802 to 1813. Up to this time the reports published were the result of private enterprise, with no aid from the state except purchases of copies for distribution to the several towns. In 1814 the Legislature authorized the Supreme Court of Errors to appoint a reporter, and from that time the reports are known as the "Connecticut Reports." The state owes much to Thomas Day, not only for his admirable services as reporter during the fifty years from 1802 to 1852, recorded in "Day's Reports," and the first twenty-one volumes of "Connecticut Reports," but also for his assistance in editing the compilation of statutes of 1808 (whose annotations tracing the history of legislation from 1636 make it the most useful edition of statute law anywhere to be found), in preparing the rarely excellent revision of 1821, and his careful editing of a large number of English law works.

While Kirby was the first of reporters, Zephaniah Swift was among the foremost, if not the first of text-writers. His "System of the Laws of Connecticut," published in 1795, and subsequently enlarged into "Swift's Digest," showed none of the literary qualities which distinguish Blackstone's Commentaries, first published thirty years before, but as a hand-book for the lawyers of that day, giving in clear, terse language a full and accurate view of existing law, its useful influence, when our bar possessed no literature of its own, can hardly be over-estimated. His "System" was followed by a digest of the law of evidence and treatise on negotiable paper. Following Swift came Tapping Reeve, whose work on "Domestic Relations," published in 1816, was of the greatest advantage, and with his subsequent treatise on the law of descents, discussed an important field of the law with an ability and vigor fully appreciated by his contemporaries, and especially acknowledged in his commentaries by Chancellor Kent, his great successor in the pioneer work of our jurisprudence. The work of James Gould properly belongs to this period, although his Treatise on Pleading was not published until 1832; it still remains a legal classic of high order.

The activity of the day showed itself in the matter of legal education as well as in reports and legal literature. In 1784 Tapping Reeve established at his home office, in Litchfield, the first American law school. He was the sole teacher until 1798, when James Gould was associated with him. Reeve continued his lectures until 1820; he died three years later at the age of seventy-nine. Gould continued his work until 1833; five years before his death at the age of sixty-eight. Over one thousand lawyers were educated at this school; nearly eight hundred from states other than Connecticut, including every state then in the Union. Both Reeve and

Gould were men of a charming and impressive personality as well as great lawyers. Their reputation drew to Litchfield Hill much of the best talent of the day, and their teachings influenced the bench and bar in every part of the country. Among the more famous of their pupils from other states were Samuel S. Phelps, John C. Calhoun, Horatio Seymour, Levi Woodbury, John M. Clayton, John Y. Mason and Henry Baldwin ; more than forty became judges of courts of last resort.

The men who occupied the bench during this period were well fitted by their learning, ability and independence to commence the work assigned to them by the General Court of laying a foundation for the development and perfection of a "permanent system of common law in this state." Oliver Ellsworth, appointed by Washington second Chief Justice of the United States Supreme Court, resigned that office in 1800, and, until his death in 1807, gave the benefit of his great talents to the Supreme Court of Errors, in his own state ; among the other judges were several of national repute, Trumbull, Daggett, Huntington, Sherman, Wolcott, Wm. Sam. Johnson, Ingersoll, Reeve, Swift, Baldwin, Gould. Unfortunately, much of their work is not reported, but their potent influence in moulding the growing law is apparent in the five volumes of Day, and the first two volumes of Connecticut Reports. In 1807, the judges provided by rules of court for bringing cases to the Supreme Court of Errors for review by a system of motions for new trials and reservations, whereby the technical results often involved in writs of error were avoided, and the real substance of the controlling questions of law were submitted for decision.

While the outward form of a separate and independent judiciary had been attained, the reality was still wanting. The exclusive jurisdiction of the courts, the tenure of office of the judges, the finality of judgments existed only at the will of the sovereign General Court. The last step in the establishment of a genuine judicial department was now to be taken.

THE CONSTITUTION.

A democracy exists where the sovereign power is vested in and exercised by a body comprising the main portion of citizens. A monarchy exists where the sovereign power is vested in and exercised by one man. In both cases the power is necessarily liable to become tyrannical ; the only distinction being, that in one case the unrestrained will of a single man, and in the other, that of a body of men, is absolute law.

A constitutional government exists where the sovereign power is vested in a body of men and the exercise of a limited portion of that power is by a fundamental law, enacted by the sovereign, vested in agents marshaled into distinct departments of government. The distinguishing mark of such a government is that the absolute power vested in the sovereign body can only be directly exercised in enacting a fundamental law, by which all other effective use of that power is delegated to agents, who, in the exercise of the delegated powers, are amenable to this supreme law, which they cannot alter and must obey. And an essential ingredient of such government, without which its continued existence is impossible, is the power of the judiciary in administering justice between parties to define the language and construe the meaning of the fundamental law. This American idea of government was largely the result of the Revolution ; it was slightly apprehended during the war when the first state constitutions were framed, but the necessity which compelled its incorporation into the United States Constitution secured its general acceptance, and the process of its development then began. Many of the most important features of these fundamental laws were of a nature incapable of a precise definition at the time

they were enacted. The proper limits of executive, legislative and judicial functions, the scope of the general principles which limited the grant of all powers, can in their very nature find a settled meaning only through the slow and cautious process of judicial determination. Hence arose the new branch of jurisprudence called "constitutional law," which has not yet passed its formative period. While the people of Connecticut were first in fully apprehending and formulating the vital principle that sovereign power consistent with the divine law is vested in the people who are to set the bounds and limitations to the exercise of that power, they were late in accepting the equally vital principle that those bounds and limitations can be efficiently set only when the people wield their absolute sovereignty in enacting a law delegating the exclusive exercise of their power to agents who in all their acts are subject to the sanctions of that supreme positive law.

After a long struggle the principle was finally accepted and the Constitution of 1818 adopted. The people, through their delegates in a constituent assembly, and by their direct vote adopting the acts of that assembly, formally dissolved the democracy that had been established in 1637, put an end to the "General Court or Assembly" through which they had directly exercised all powers of sovereignty unrestrained by any law except their present will, and delegated the exercise of their power for the future to three separate and independent departments of government, and set the limitations of the delegated power by the restrictions involved in the division of powers between distinct departments, in provisions defining the frame-work of the government established, and in general principles declared to be fundamental conditions to the grant of every delegated power. With the adoption of the Constitution the judiciary was for the first time freed from any dependence, in the exercise of judicial functions, on the legislature or executive, and became a distinct department of government, receiving its powers directly from the Constitution. Its jurisdiction was extended over the new field of constitutional law; a field which was for a time, and naturally, not fully understood, owing partly to the novelty of the subject and partly to the education of the judges under a system in principle widely different and even antagonistic. The Constitution made the tenure of office of the judges independent of the legislature; directly conferred a prescribed jurisdiction on the Supreme Court of Errors and Superior Court and left the establishment, powers and duties of inferior courts, not inconsistent with the jurisdiction directly given to the higher courts, to be settled by the legislature. The general scheme of judicature has not been materially changed except in the unfortunate multiplication of local inferior courts.

The judicial story since 1818 belongs rather to the present day, and runs more on lines common to most of the states. In legislation affecting the administration of justice, such as the abolition of imprisonment for debt, of the barbarous legal fiction by which a woman lost her identity in marriage, and of several rules for the arbitrary exclusion of relevant testimony, Connecticut has shown an early appreciation of the evils existing, and much practical common sense in the remedy applied; but she was late in reforming procedure by adopting a single form of action for all suits at law and in equity. This was partly due to the exceeding simplicity of the procedure early established. When the change was made it was thorough and simple. The "Practice Act" occupies less than ten printed pages, and makes no changes except those essential to its single purpose, *i. e.*, "to simplify procedure in civil causes, and to unite legal and equitable remedies in the same action." Much of the friction occasioned in other states by a change from the old practice to the new, was avoided by a provision authorizing the judges of the Superior Court to "make all such orders

and rules as should be necessary and proper to give full effect to the provisions of this act, including suitable forms of procedure under the same." The best comment on the ease with which the change was accomplished is found in the fact that the recently published "Index-Digest of Conn. Reports" indicates that within the sixteen years since the act went into effect, less than thirty cases turned on questions arising under its provisions.

It is fortunate that in each independent jurisdiction the science of law develops under some exceptional circumstances. Differences in non-essentials may thus be induced, but the testing of legal principles under varied surroundings can be relied upon to disclose with greater clearness the essential qualities which verify universal rules of jurisprudence, and to lead us more readily to substantial uniformity on a common ground of permanent truth. While conditions in olden times undreamed of, with which courts are now called upon to deal, constantly exact unaccustomed applications of primary truths, and incline us to treat all questions more from the standpoint of original analysis, especially in view of the unmanageable mass of reported cases, it is still true that the history of the law in every place where a sound system is administered, furnishes much assistance in distinguishing abiding principles from precepts that have resulted from some temporary cause. And so it will be found that a new light may be shed on more than one field of investigation, through a thoughtful study of the genesis of Connecticut.



